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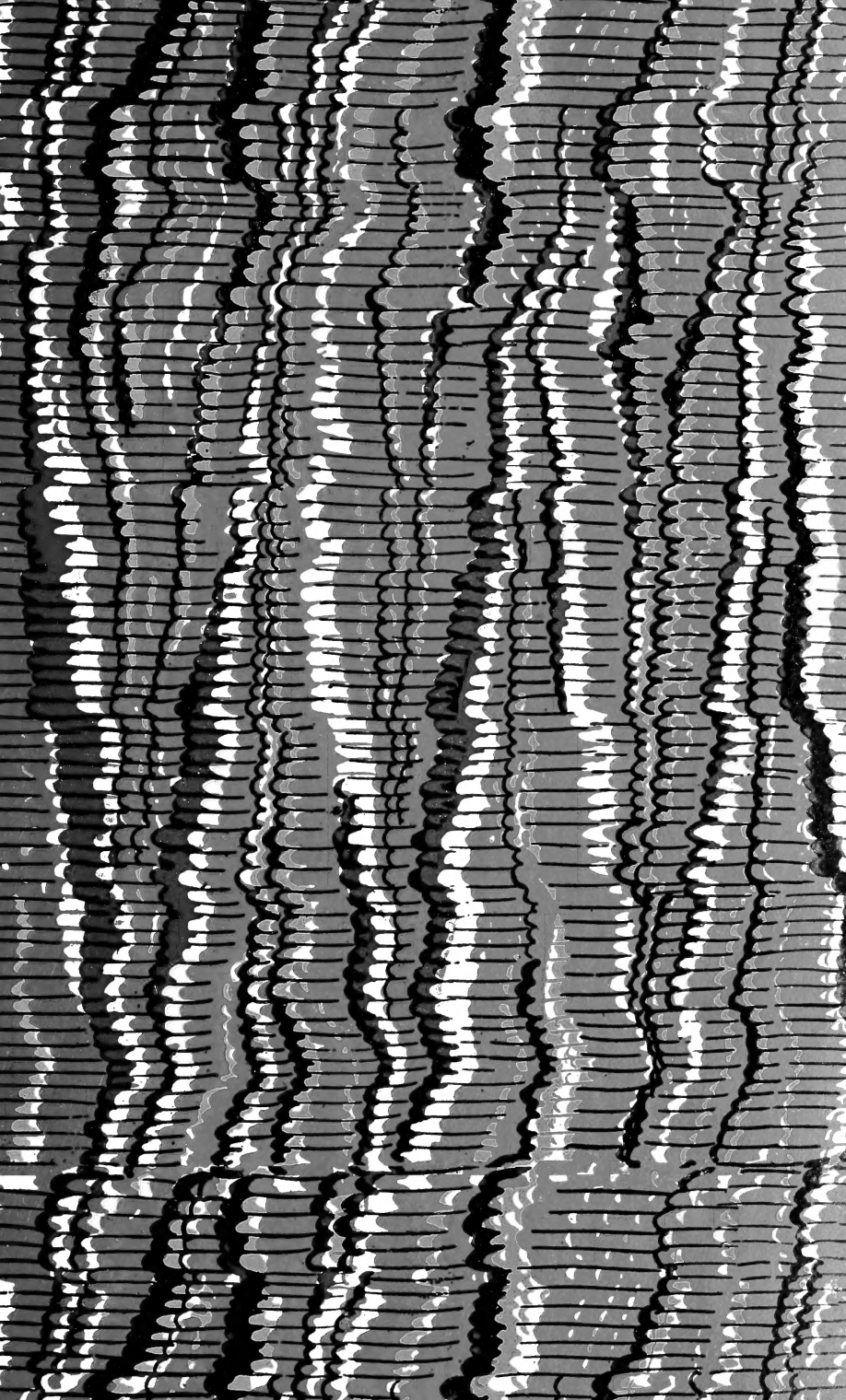
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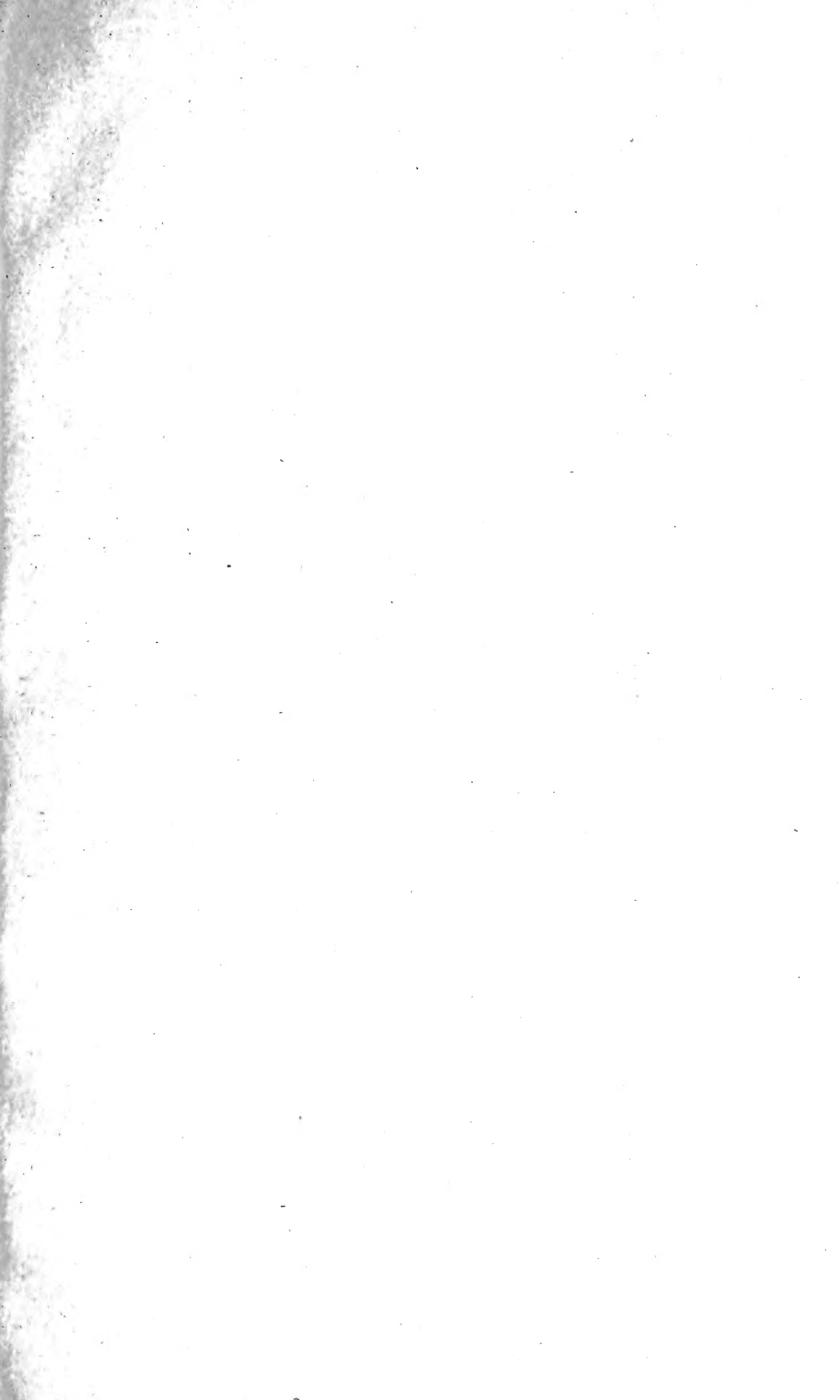
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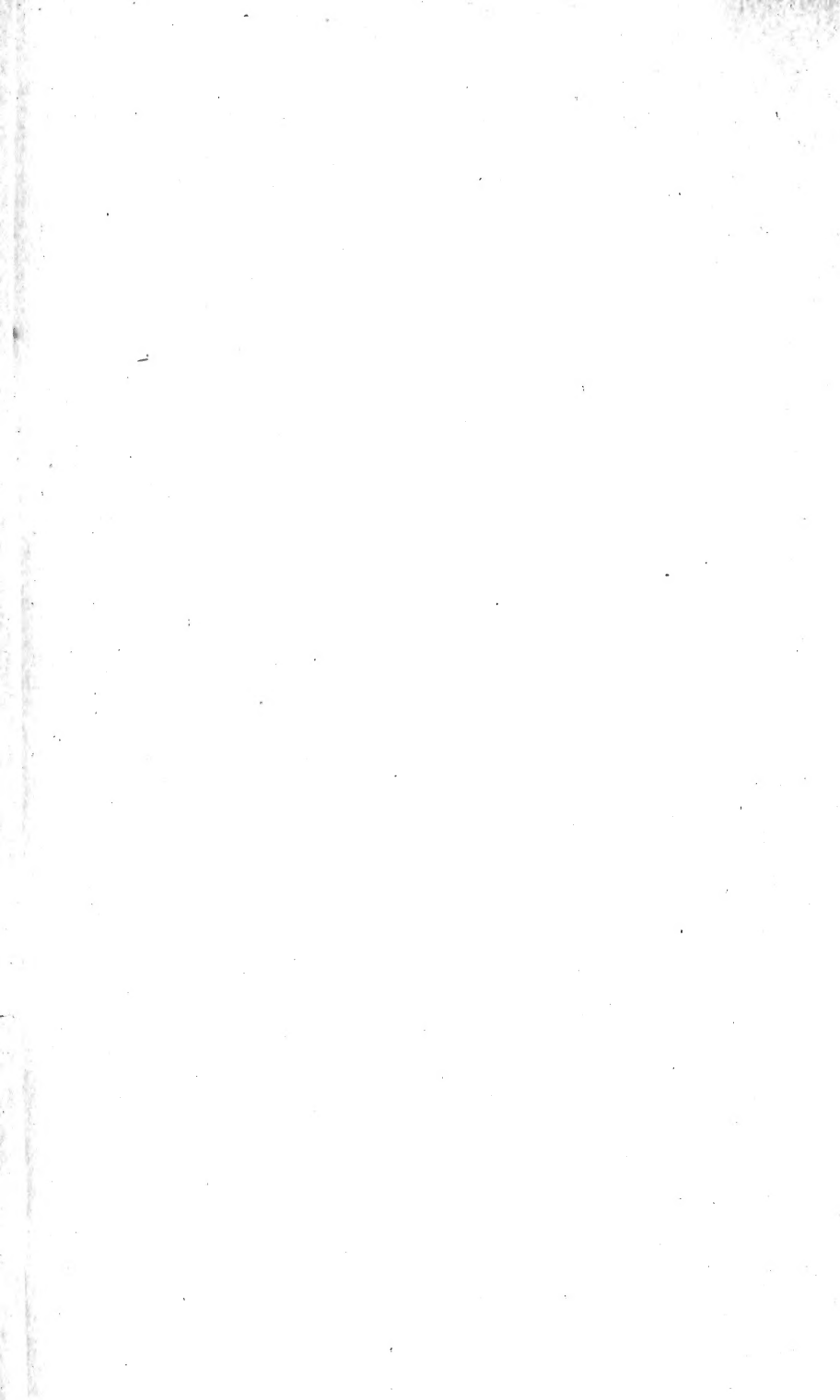
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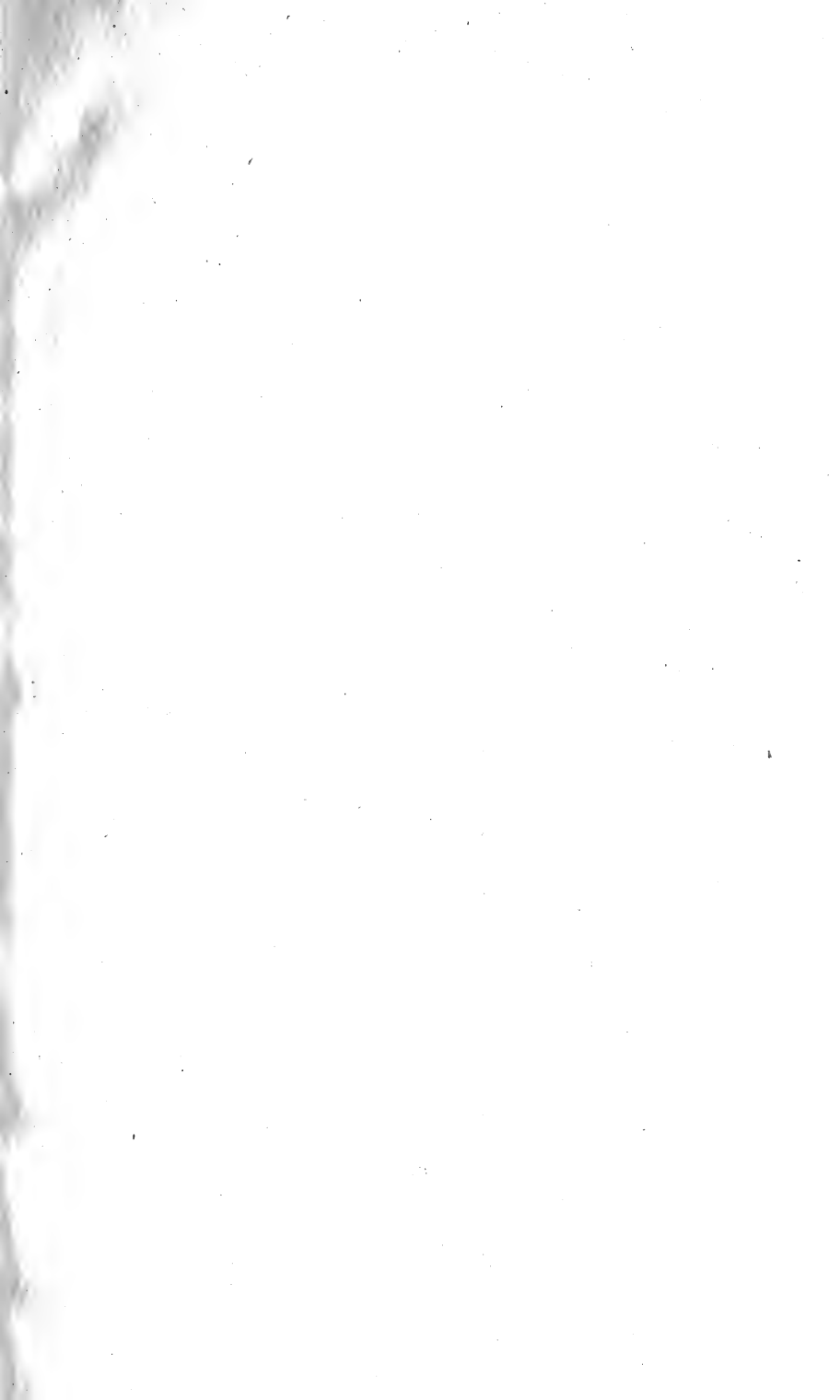














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ELEMENTS
OF
BOTANY;
OR
AN INTRODUCTION
TO THE
SEXUAL SYSTEM OF LINNÆUS;
TO WHICH IS ANNEXED
AN ENGLISH BOTANICAL DICTIONARY.
ILLUSTRATED BY COPPER-PLATES.

BY R. HALL, M.D.

LONDON:

Printed by E. Hodson, Cross-street, Hatton Garden;

FOR VERNOR AND HOOD IN THE POULTRY;

T. HURST, PATERNOSTER-RROW; AND R. BENT, COVENTRY-
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1802.

P R E F A C E.

THE Sexual System of Botany, as this title implies, is founded on the discovery, that there is in vegetables, as well as in animals, a distinction of sex.

That the doctrine of the sexes was not wholly unknown to the ancients is evident, not only from the writings of Herodotus, Dioscorides, Theophrastus, &c. but from the practice, which has long prevailed, among the Arabians, and other Eastern nations, of assisting the fecundation of their Palm and Fig trees. But although the ancients were well acquainted with the necessity of promoting the action of the male on the female flowers, and that the Sexual process was thus, as it were, obtruded on their senses, yet, through inattention to the anatomy of flowers, and the functions of the several parts, they remained ignorant of the true operations of nature in this phenomenon, though constantly present to their observation. Dr. Grew, and other English philosophers, as

early as 1676, and still more lately, *M. Vaillant*, a celebrated French botanist, suggested that the stamens and pistils were analogous to the organs of generation in animals, and were adapted by nature to answer similar purposes. Very incorrect notions, however, continued to prevail on this subject, till *Linneus* appeared as a botanical writer, and established the existence of distinct male and female organs in plants, by numerous and well conducted experiments: a detail of which the reader will find in *Dr. Smith's Translation of the Dissertation on the Sexes of Plants*; or in the *Sponsalia Plantarum*, printed in the first volume of the *Amœnitates Academicæ*. But, although from what has been adduced, it evidently appears that the discovery of the sexes in plants cannot be attributed to *Linneus*, yet to him unquestionably belongs the merit of having perfectly ascertained this singular and important fact, and constructed on it his *Sexual System*. Various systems have indeed, been formed by different authors, some of which certainly display great talent and ingenuity, but none of them can, either, in theory, or practice, be compared with that of *Linneus*; which enables us, with the greatest facility, to ascertain not only the Class, Order, Genus, Species, and Variety of any plant, but every other circumstance connected with it; on which account it has now justly obtained the preference over every
other,

other, and is generally adopted by Botanists in every part of the world.

Some men distinguished for botanical knowledge, have, it is true, endeavoured to improve this system, by reducing the number of classes, &c. but, of these alterations, our most eminent botanists have expressed the most marked disapprobation. Coinciding with these authors, in the propriety of adhering to the Linnæan system, in preference to the altered, or as it is usually termed, the reformed method of Thunberg, it has been the object of the author of the present Compendium, to give such an explanation of that system, and of the method of investigating the Classes, Orders, Genera, &c. as will, he trusts, enable any person, by a moderate share of attention, to acquire the rudiments of the science.

The Characters of the Genera of British plants are, for the most part, taken from the works of Linnæus, Murray's last edition of the *Systema Vegetabilium*, and occasionally from authors of our own country. An explanation of the botanical terms, with their corresponding latin, employed by modern authors, is given in order to facilitate the researches of the student, and enable him to consult, without difficulty, the present treatise, as well as more elaborate works on botanical subjects. The terms employed will be found, for the most part, to agree with those

those recommended by Professor Martyn ; to whom British Botanists owe many obligations, for the trouble he has taken in introducing an appropriate vernacular language into this science.

To the work is subjoined an approved method of preparing an Herbarium, or Collection of Plants, after the manner of Hull and Withering.

An Index of the names of the British Genera, with their respective places in the Linnaean system, concludes the volume.

We deem it here, altogether unnecessary to enter into a detailed consideration of the advantages derivable from the study of botany ; since these must be sufficiently evident to any one, who considers its intimate connection with agriculture, medicine, and many of the different arts of life.

In order, however, that the greatest advantages may be derived from botanical pursuits, to a knowledge of the nomenclature of plants, should be united an attention to the physiology of vegetables, in the investigation of which, the student will find himself greatly assisted by an acquaintance with the doctrines of modern chemistry. For, as this science renders us acquainted with the principles of lies, and with the effects resulting from their different combinations, it may obviously be applied

with

with the greatest advantage, to illustrate many phenomena in the aconomy of vegetation ; since it is, by it alone, we can analyze the substances of which vegetables are composed, or infer any reasonable conclusion respecting the nature of their aliment.

It were therefore much to be wished, that the attention of those who cultivate the study of botany were more generally directed to the interesting science of chemistry, the acquisition of which would not only tend agreeably to diversify their pursuits, but also enable them to assist in raising Phytology to the rank of an important science.

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INTRODUCTION TO BOTANY.



BOTANY, taken in the most universal and extensive sense, signifies a knowledge of plants, and the various purposes to which they are applicable, whether in medicine, chemistry, or in any of the different arts of life. The science of Botany, however, is generally limited to a mere knowledge of the different plants themselves, and of the characteristic marks by which every individual species may be known.

Some persons have been inclined to regard the study of this science rather as an ornamental than an useful pursuit; yet the utility and advantage of an acquaintance with botanical classification, in a variety of circumstances and situations of life, may readily be evinced. This knowledge is, indeed, indispensably necessary for those who wish to apply plants to any useful purpose. There are certain natural classes and orders which are so denominated, because every genus and species comprehended under them are not only distinguished by the same characteristic marks, but are likewise endowed, more or less, with the same qualities. For instance, let a Botanist examine the flower of a plant, and from its character he can pronounce whether it belongs to a farinaceous, poisonous, or any other class. In like manner the Physician, after ascertaining by clear and unquestionable experiments, the medical properties of any one plant,

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will

be enabled to determine the virtues of all the others belonging to that particular genus, which cannot fail greatly to shorten the labour of investigation. As an example of this, let us suppose the number of known species to be 20,000; by acquiring a knowledge of the virtues of one genus, we shall be enabled at a medium to know those of twelve species; and by discovering the virtues of one genus belonging to a natural order, the virtues of perhaps 300 or 400 species are ascertained. By a knowledge of this science the Farmer and Gardener may enlarge the boundaries of cultivation, and greatly augment the number of fruits and vegetables which can be usefully applied to the sustenance of man and other animals.

The origin of Botany, like that of most other sciences, is involved in much obscurity. Anaxagoras, Pythagoras, and other ancient philosophers among the Greeks, appear to have written treatises on plants, which are now lost. From the quotations, however, that remain in the works of Pliny, &c. they do not seem to have been of much value.

Theophrastus, the disciple of Aristotle, who was born in the island of Lesbos, and flourished in the third century before the Christian era, has left behind him a work on this subject, intitled *The History of Plants*, in which he considers their origin, propagation, anatomy, and construction; as also vegetation and vegetable life. He distributes vegetables into seven classes, or primary divisions; which have for their object the generation of plants, their place of growth, their size as trees and shrubs, their use as pot-herbs and esculent grains, and their lactescence, or the fluid that flows out on their being cut or divided.

Dioscorides, a Roman Citizen, but by birth a Greek, was the next botanist of any consequence; he lived near 300
years

years after Theophrastus, and has described about 600 plants. The arrangement of these into four classes, he founded upon their uses in medicine and domestic œconomy. Contemporary with Dioscorides were Antonius, Cato, Varro, Virgil, and several others celebrated not only for Botanical Knowledge, but for an acquaintance with Agriculture and Rural Œconomy. Pliny the elder has described about a thousand different species of plants, but like other ancient Botanists, he scarce uses any mode of arrangement, except the general division of them into trees, shrubs, and herbs. This science was necessarily very limited among the ancients from the want of a proper systematic arrangement, and after the time of Pliny rapidly declined, until it was totally lost on the destruction of the Western Empire.

On the revival of letters, about the commencement of the 16th century, the works of Aristotle, Theophrastus, Dioscorides, &c. were translated into Latin (then the common language of Europe) and ably commented on by several learned Botanists of that period. Cæsalpinus, a physician at Pisa, may, however, be said to have given origin to Systematic Botany: Availing himself of the hints thrown out by Gesner, he arranged vegetables according to the receptacle and fruit; and although this method was attended with considerable inconveniences, it was still greatly superior to the equivocal and insufficient characters on which former Botanical Systems had been established: Yet, far from being adopted by his contemporaries, it perished with its author, and was not revived until near a century afterwards, by Dr. Morison of Aberdeen, who from being the restorer, has been generally celebrated as the founder of scientific arrangement.

In constructing his system, Morison has not only attended to the fruit, but likewise to the corol and habit of plants;

and although this method is necessarily very imperfect, it furnished several valuable hints to future Botanists. Ray and Tournefort owe him many obligations, and even Linnæus has not been ashamed to acknowledge himself indebted to the labours of Morison.

It would not only be unnecessary, but altogether inconsistent with the design of the present undertaking, to enter into a detailed consideration of the advantages and disadvantages of the different exploded systems of Botany. That of Linnæus would appear to be now deservedly followed almost in preference to every other.

Before entering on the sexual system it will be necessary to discriminate the substances of which (at least) the more perfect vegetables are composed.

The cuticle (*epidermis*) is the thin, dry, porous integument which constitutes the exterior covering of the plant.

The outer bark (*cortex*) is the intermediate membrane, which is of a laminated texture, dry, firm, and for the most part cracked.

The inner rind or bark (*liber*) constitutes the inmost membrane, and is of a moist and pliant nature. These three layers are usually comprehended under the general term bark.

Alburnum is the soft white substance found in trees, between the inner bark and the wood, composed of layers of the former, which have not yet attained the solidity of the latter. By workmen it is called the sap.

The wood (*lignum*) is composed of several hard and compact concentric layers, each of which is successively formed from the inner bark of the former year.

The pith or marrow (*medulla*) is the soft spongy substance occupying the central cavity in some plants. It
abounds

abounds more in young than in full grown plants, and some trees contain a much greater quantity of it than others.

To the cellular texture of these parts, according to Linnaeus, are distributed three sets of vessels. The sap vessels (*succiferous*) destined to convey the juices of the plant.

Air vessels (*tracheæ*) destined to receive and distribute air.

Small bladders (*utriculi*) which contain the secreted fluids.

But Dr. Darwin and other writers on the Anatomy and Physiology of Plants, conceive they are furnished with numerous sets of vessels, whose functions are analogous to those of the human body.

The sap vessels, by which the juice is conveyed from the root to every part of the plant, are extremely small, and supposed to be wholly destitute of ramifications.

Dr. Walker of Edinburgh marked the progress of the ascending sap by making a number of incisions into a young birch tree, about an inch deep, and a foot asunder, before the sap began to arise; and thus discovered, that it flowed first through the lowest opening, and ascended gradually to the highest; but that as soon as the leaf buds expanded the incisions ceased to yield any more sap.

At 40° of Fahrenheit the sap did not ascend, and but slowly at 45°: When the same thermometer stood at 50° it rose about one foot in 24 hours. He likewise found that the sap moved with greater celerity in young than in old branches; and flowed more copiously from the section of an inverted than an upright branch. By cutting a vine near the ground, at the commencement of Spring, and fixing a tube in the remaining stump, Dr. Hales ascertained that the sap ascended to the height of 21 feet in the tube.

These

These experiments seem to prove, that the juices are propelled upwards by the activity of the vessels, as in animal bodies, and not by mechanical or chemical attraction.

The proper Vessels are said to be larger, but less numerous than the sap vessels. They contain the proper juice or blood, which differs very much in different vegetables.

— The air vessels were a long time erroneously supposed to be filled with air alone; but more recent experiments have discovered that they likewise contain juice, which they distribute to the wood, bark, and leaves of the plant. They are considered by some authors as vegetable absorbents: Their structure consists of a spiral line, and they are larger in diameter than the preceding vessels. There are, however, other absorbent vessels, the office of which is to imbibe water, air, carbone (or coal) &c. and whatever constitutes the food of plants: They appear in the fibres of the roots, and on the surface of the leaves, and it seems sufficiently probable, that no part of the plant is wholly destitute of them.

The existence of excretory vessels on the trunk, branches, leaves, and flowers of plants, has been likewise satisfactorily demonstrated by Dr. Hales, who found that a sun-flower three and a half feet high, perspired two pints in one day. The excretions from the roots of some plants have been found to be injurious, nay even destructive to others which grow in their vicinity*.

The

* From the observations of Brugmans, it would appear, that the roots of some plants which had been injured by Darnel, assumed the appearance of having been destroyed by an insect. The above author, however, after the most minute and accurate investigation, could not discover the presence of any *animalcule*. He then placed together Darnel and another plant in a glass vessel, upon which the roots

The secretory vessels are usually accompanied by a glandular apparatus, and seem designed to secrete the juices necessary in the œconomy of vegetation.

Some authors have conceived plants to be possessed of medullary vessels; but, strictly speaking, they are only cells constituting the pith or medulla of the plant.

It must be acknowledged, that our knowledge on this subject is very limited, and that it would still require farther experiments and observations to ascertain, with precision, the structure and distribution of the vessels, and the manner in which their juices are conveyed to the different parts of the plant. Dr. Darwin is of opinion, that the circulation in the lungs or leaves of plants is carried on in a manner similar to that of fishes. “In fish” he observes, “the blood after having passed through the gills does not return to the heart, as from the lungs of air-breathing animals; but the pulmonary vein taking the structure of an artery after having received the blood from the gills, which there gains a more florid colour, distributes it to the other

roots of the latter suffered in a similar manner; hence he was induced to conclude, that in both cases the roots of the plants had been injured by the fluid excreted from those of the Darnel. Wheat is also said to be destroyed in the same way by the Blue flowered Flea Bane, and Oats by Corn Saw Wort, &c.

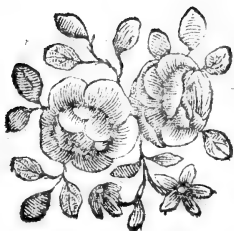
The roots of several culinary vegetables likewise become diseased, when intermixed in the same bed with some other species of plants: The Carrot, for example, suffers from growing near to Elecampane. These peculiarities in the economy of vegetables afford an useful as well as a curious subject of enquiry to the practical Agriculturist and Gardener: by repeating and extending the experiment of Brugmans to different plants and grains, and observing the results of these with accuracy and attention, they may be thus enabled to throw considerable light on the diseases of vegetables, and learn to keep at a distance plants which are naturally injurious to others in their vicinity.—*Editor.*

parts of their bodies. The same structure occurs in the livers of fish, whence we see in those animals two circulations independent of the power of the heart.

“ In a manner similar to these the course of the fluids in the roots, leaves, and buds of vegetables seems to be performed. The absorbent vessels of the roots and surfaces unite at the footstalk of the leaf, and then, like the *vena portarum*, an artery commences without the intervention of a heart, and spreads the sap in its numerous ramifications on the upper surface of the leaf; here it changes its colour and properties, becomes vegetable blood, and is again collected by a pulmonary vein in the under surface of the leaf. This vein, like that which receives the blood from the gills of fish, assumes the office and name of an artery, and branching again disperses the blood upward to the bud from the foot-stalk of the leaf, and downward to the roots, where it is all expended in the various secretions, the nourishment and growth of the plant, as fast as it is prepared.

“ The organ of respiration already spoken of, belongs particularly to the shoots or buds; but there is another pulmonary system, perhaps totally independent of the green foliage, which belongs to the fructification only; I mean the corol or petals. In this there is an artery belonging to each petal, which conveys the vegetable blood to its extremities, exposing it to the light and air, under a delicate membrane covering the external surface of the petal, where it often changes its colour, as is beautifully seen in some party-coloured poppies. The vascular structure of the corol as above described, and which is visible to the naked eye, and its exposing the vegetable juices to the air and light during the day, evince that it is a pulmonary organ; and as the glands which produce the prolific dust of the anthers, the

the honey, wax, and frequently some odoriferous essential oil, are generally attached to the corol, and always fall off and perish with it, it is evident that the blood is elaborated or oxygenated in this pulmonary system for the purpose of these important secretions.



CHAPTER I.

Of the Component Parts of a Plant.

LINNÆUS divides Plants into three primary parts, viz.

The { Root (*radix*)
Herb (*herba*)
Fructification (*fructificatio*)

The root consists of two parts, the *caudex* or stump, and the *radicula* or little root, which are distinguished according to their figure, duration, &c. The former is the body or knob of the root from which the trunk and branches ascend, and the fibrous roots descend, and which in different plants is either solid, bulbous, or tuberous: the latter is the stringy or fibrous part of the root, descending from the caudex, and is in fact the principal and essential part of every root by which nourishment is imbibed from the earth for the support of the plant.

Roots are for the most part concealed beneath the surface of the ground; those however of the parasitical tribe are inserted into the stems of trees, &c. from whence they derive their food. Aquatic plants are often found floating on the surface of water, without having their roots attached to any solid body whatever. Other vegetables are firmly fixed to the hardest stones; and as these last appear to have very imperfect roots, we may safely conclude, that their chief nourishment

ishment is imbibed by absorbent vessels on their upper surface: and in some species of plants, not the smallest trace of any roots whatever have been discovered.

The Herb is that part of the vegetable which arises from the root, and is terminated by the fructification (flower and fruit). It includes the *trunk*, *leaves*, *fulcra*, and *hybernacle*.

I. The Trunk (*truncus*) is employed as a generic name, comprehending four species, and is that part of the plant which supports the leaves, fulcres, and fructification. These different species are termed the *stem*, *culm*, *scape*, and *stipe*.

1. A stem (*caulis*) is a trunk which elevates both the leaves and fructification, and is applied to trees, shrubs, and herbs: when it is in the form of a single stalk, it is denominated *simple*, and *compound* when it divides into branches.

2. A Culm (*culmus*) is a straw or trunk peculiar to grasses; it likewise elevates both the leaves and fructification; and is sometimes jointed, at others round or angular.

3. Scape (*scapus*) is a trunk elevating the fructification, but not the leaves; that is, it proceeds directly from the root, and terminates in the flower, as in Hyacinth, Narcissus, &c.

4. Stipe (*stipes*) is a trunk which passes into leaves; or, according to Linnæus, it is the base or trunk of a mushroom.

II. The leaves (*folia*) are considered as the organs of motion and respiration. They appear chiefly to be produced from the expansion of the vessels of the stalk, forming several ramifications like net-work, having the interstices filled up with a pulpy substance; and their external cuticle, or bark, is supposed to be a continuation of the scarf-skin of the stalk.

Leaves are either simple or compound, and admit of various distinctions, from their number, figure, situation, direction, &c.

A *simple leaf* is that which adheres to the branch singly, or the foot-stalk of which is terminated by a simple expansion, not separated to the middle rib, and is determined by its shape, surface, divisions, &c.

A *compound leaf* is that, the foot-stalk of which is furnished with several simple expansions; or whose divisions extend to the middle rib, or foot-stalk, supporting several lobes or little simple leaves, of which the compound leaf consists: these are distinguished by the shape, &c. and the manner in which they are attached to the common foot-stalk, as winged, palmated, &c. Compound leaves admit of a great variety of modifications, which are expressed by different terms. The manner or place in which leaves are attached to the plant, is denominated the *determination of leaves*, and is discriminated by several different terms, according to their disposition, insertion, figure, &c.

III. Fulcres (*fulcra*) are those external parts intended for the support and defence of the plant, and are of seven kinds, viz. *Petiole*, *Peduncle*, *Stipule*, *Tendrils*, *Pubescence*, *Arms*, *Bracte*.

1. A *Petiole* (*petiolus*) is termed by some writers the *leaf-stalk* or *foot-stalk*; and is a fulcre elevating a leaf only.

2. A *Peduncle* (*pedunculus*) is a fulcre supporting the flower and fruit; and it is sometimes branched, or separated into pedicels, or partial peduncles.

3. *Stipule* (*stipula*) is a scale or leaf-like body, situated at the base of the foot-stalk of leaves or flowers, and intended for their support: they likewise often afford a good distinction for the species.

4. A Tendril (*cirrhus*) is a fine spiral string or fibre, by which plants fasten themselves to some other body for support, as the *vine*, *pea*, &c. In some plants they are placed opposite to the leaves, in others at the side of the foot-stalk of the leaf; frequently they proceed from the leaves themselves, and sometimes put forth roots, as in ivy, &c.

5. Pubescence (*pubes*) is a term comprehending every kind of clothing discernible on plants, such as *hair*, *down*, *bristles*, *glands*, &c. They serve the double purpose of secretory vessels and a defence to the plant.

6. Arms (*arma*) are the defensive weapon of plants against the attacks of animals, and comprehend *prickles*, *thorns*, and *stings*.

7. A Bracte (*bractea*) is a kind of leaf situated near a flower, but which is considerably different from the other leaves in shape and colour: These floral leaves sometimes terminate the flower-stalk; being composed of large *bracteæ*, resembling a bush of hair, and are then termed *bracteæ comosæ*.

The mode, by which flowers are joined to their several peduncles, is expressed by the generic term INFLORESCENCE, which comprehends *Spadix*, *Cyme*, *Umbel*, *Spike*, *Ament*, *Strobile*, *Corymb*, *Raceme*, *Panicle*, *Thyrse*, *Fascicle*, *Head*, *Verticle*, *Compound Flower*, and *Aggregate Flower*.

1. A Spadix (*spadix*) is a spectacle, or peduncle, proceeding from a spathe or sheath, which opens longitudinally; and is either branched as in *Phoenix*, or simple as in *Narcissus*, &c.

2. Cyme (*cyma*) is when several fastigate peduncles proceed in a radiate form from the same centre, and rise to nearly an equal height: they are subdivided into several irregular scattered pedicels, as in the *Elder*, &c.

3. An Umbel (*umbella*) is a receptacle from a common centre elongated into proportionate filiform peduncles; or it consists of several florets placed on fastigate peduncles proceeding from the same stem or receptacle; and which, tho' of different lengths, rise to such a height as to form a regular head or umbel, either flat, convex, or concave; and both the common and partial calyx is termed by Linnæus an *involutum*. It is denominated a *simple umbel*, when it has no subordinate divisions; a *compound umbel*, when each peduncle is subdivided at its extremity into several smaller peduncles, for the purpose of supporting the flowers, so as to form a variety of little umbellas, uniting in one head; the whole of which, taken together, is termed an *universal umbel*; whilst the little umbellas are called *partial umbels*.

4. Spike (*spica*) is a species of inflorescence, wherein the flowers having no partial peduncles, are arranged alternately around a common simple peduncle. It is termed a single-rowed spike (*spica secunda*) when the flowers are all turned one way; and double-rowed spike (*spica disticha*) when the flowers point two different ways.

In grasses the peduncle or receptacle is termed a spike-stalk (*rachis*).

5. An Ament (*amentum*) is a kind of inflorescence formed from a long common receptacle, along which are disposed *squamæ*, or scales; which produce that species of calyx termed an *amentum* or *catkin*, as in the *hazel*, *willow*, &c.

6. A Strobile (*strobilus*) is a species of pericarp formed from an ament, as the cone of the *pine-tree*.

7. A Corymb (*corymbus*) is a kind of spike, the flowers of which have each its proper peduncle, proportionally raised. It is that kind of inflorescence wherein the peduncles
of

of the flowers arise at different heights from the common peduncle or stalk: They are sometimes simple and sometimes branched, and the flowers form nearly an even surface at the top, as in *radish*, *mustard*, and the other cruciform plants, from the upper becoming gradually shorter than the lower peduncles.

8. A Raceme (*racemus*) is when the flowers are placed on short partial pedicels proceeding as lateral branches from the common peduncle, as in the currant, &c. It differs from a spike in having its flowers on partial peduncles, and from a corymb by these peduncles being nearly of a similar length.

9. A Panicle (*panicula*) is composed of flowers dispersed upon peduncles variously sub-divided; or it is a kind of branching spike composed of several smaller ones attached along a common peduncle, as in some species of grasses and plants. When these partial peduncles diverge, and are only loosely attached, it is termed a diffuse panicle; but when they converge it is called a close panicle.

10. A Thyrses (*thyrsus*) is a panicle condensed into an ovate or egg-shaped form; the lower peduncles, which are longer, horizontally; and the upper, which are shorter, ascend vertically, as in *lilac*, &c.

11. A Fascicle (*fasciculus*) has several erect parallel peduncles, elevating flowers which approximate so as to form a flat even surface, as in the *Sweet William*, &c.

12. A Head (*capitulum*) is composed of a number of flowers collected almost into a globular form, as in *Thrift*, &c.

13. A Verticil (*verticillus*) is that kind of inflorescence in which many flowers are produced in rings round the common stem: they have very short partial peduncles, and are

all of the labiated kind, such as *Mint*, *Clary*, &c. A *verticil* has several distinctions, such as naked, bracted, &c.

14. A compound flower (*compositus flos*) has several sessile florets on an entire dilated receptacle. Compound flowers also admit of a further description, viz. each floret consists of a single petal, with generally five divisions, and having five stamens distinct at the base, but united at the top by the anthers into a cylinder, through which the pistil passes, longer than the stamens, and crowned by a stigma with two divisions, that are rolled backwards, and having a single seed placed on the receptacle under each floret.

15. An Aggregate Flower (*aggregatus flos*) properly so termed, consists of several smaller flowers or florets, placed on partial peduncles, on a common dilated receptacle, and within a common perianth; and in those flowers where each floret has its proper calyx in the form of a perianth. But taken in a more extensive sense, an *Aggregate Flower* likewise comprehends the *Compound Umbellate*, *Cymose*, *Amentaceous*, *Glumose*, and *Spadiceous* flowers.

IV. The Hybernacle (*hybernaculum*) or winter lodgement is that part of the plant which defends the embryo, or future shoot, from external injuries during the Winter, and is of two kinds, viz. *Bulb* and *Bud*.

1. A Bulb (*tulbus*) is a hybernacle produced from decayed leaves. It is generally placed on the descending *caudex* of certain herbaceous plants, and has by some been improperly considered as the root itself. Bulbs are of the following kinds; 1. *Squamous*; consisting of scales laid over each other, as in the *Lily*. 2. *Solid*; consisting of a close substance, as in *Tulips*. 3. *Coated*; consisting of many coats in-folding each other, as in *onions*. 4. *Cauline*, produced not only from the sides of the principal bulb, termed
a sucker,

a sucker, or offset, but from other parts of the stem, as in *Wild Garlic*, some species of *Onion*, &c.

2. A Bud (*gemma*) is formed of the rudiments of future leaves, scales, stipules, or petioles, and is situated on the ascending *caudex*, or stem and branches. In general buds are of three kinds: 1. Those that contain the flower alone, or where the leaf-buds and flower-buds are distinct, as in *Ash*, *Poplar*, &c. 2. Those containing leaves only, as in *Birch*, &c. 3. Those that contain both flower and leaves, as in the generality of plants.

It is observed in hot climates, that few plants have buds; at least they are destitute of that scaly covering which constitutes the hybernacle, and affords a protection against the cold.

The Fructification (*fructificatio*) is defined by Linnæus to be a temporary part of vegetables, appropriated to generation. It consists of seven principal parts, viz. the *Calyx*, *Corol*, *Stamen*, *Pistil*, *Pericarp*, *Seed*, and *Receptacle*. The four first are properly parts of the *flower*, and the three last of the fruit; although the *Receptacle* has been considered by some Botanists as common to both.

I. The Calyx (*calyx*) is a continuation of the exterior bark of the plant, and forms the outermost covering, or integument, of the fructification. It comprehends seven species, viz. *Perianth*, *Involucre*, *Glume*, *Ament*, *Spathe*, *Calyptre*, and *Volve*.

1. A Perianth (*perianthium*) is the most frequent species of Calyx. It is situated close to the other parts of the fructification, and consists of one or more leaves or leaflets, which are mostly of a green colour, as in the *Primrose*, &c.

2. An Involucre (*involucrum*) is a calyx situated at the base of an umbel, at a distance from the other parts of the flower:

flower: it is termed a *general*, or *universal involucre*, when placed at the origin of an universal umbel; and a *partial involucre* when it is stationed at the base of a partial umbel.

3. A Glume (*gluma*) is the calyx, or external husk of grasses. It consists of one or more leaves, termed valves; and when situated contiguous to the other parts of the flower, inclosing the *stamens* and *pistils*, answers the purpose of a *blossom*; but when placed on the outer side, and inclosing the inner valves, as well as the *stamens* and *pistils*, it is denominated the *calyx*, and frequently contains several florets.

4. An Ament (*amentum*) is composed of flowers and chaff, on a long, slender, thread-like receptacle; as in the Willow, Hazel, &c. It is usually named a *catkin*, and was considered by Linnæus, both as a species of inflorescence, and as a calyx.

5. A Spathe (*spatha*) is a calyx which bursts longitudinally, and puts forth a *spadix*; although it is found in plants which have no spadix, such as *Snow-drops*, *Crocuses*, &c.

6. A Calyptra (*calyptra*) is the proper calyx to *mosses*; it covers the *anthers* of the *stamens*, like a hood or cowl.

7. A Volve (*volva*) is the proper calyx of a fungus; it is of a membranous nature, surrounding the stalk, and attached to the pileus, or cap.

In several plants it is difficult to distinguish the *calyx* from the *bracteæ*, or floral leaves, which are frequently situated on the flower stalks, so near the lower parts of the fructification as to be very readily mistaken for it. They may, however, be readily discriminated by an attention to the following circumstance: The floral leaves differ in shape and colour from the other leaves of the plant, but
are

are commonly of the same duration; while the calyx, on the contrary, always withers immediately before, or when the fruit is fully ripe.

II. The Corol (*corolla*) is formed of an extension of the internal bark of the plant; and covers the fructification in the form of different coloured leaves.

It is denominated a one, two, three, or many-petalled corol, according to the number of leaf-like petals of which it is composed.

The one-petalled corol consists of two parts: the *tube*, or lower contracted part; and the *limb*, or upper dilated part; which again, according to its figure, is either denominated *bell-shaped*, *funnel-shaped*, *salver-shaped*, &c.

In the two, or many-petalled corol, each petal consists of a *claw*, which is the lower part, and a *lamina*, or thin plate, which is the superior part, and usually expanded; and the whole dilated part, or border of the corol, is denominated in this case the *limbus*.

The Nectary (*nectarium*) is defined by Linnæus to be that part of the flower appropriated to produce and contain the honey. Its shape, situation, and appearance, is various in different plants; and it is on this account denominated by different terms. It is frequently united with the corol, and considered as an appendage to it: but is sometimes perfectly distinct from the petals, and attached to the calyx. It is often shaped like a horn, or spur, as in *Violet*, *Larkspur*, &c. sometimes in the figure of a cup or tube, as in *Narcissus*, &c. and in the tribe of Cruciform plants it appears like a small gland, situated at the base of the germen. In some species of plants the nectary is of a singularly beautiful structure, whilst in others it is either altogether wanting, or at least extremely indistinct.

III. The

III. The Stamens (*stamina*) are the male parts of the flower, and are supposed by Linnæus to be a prolongation of the wood: they are intended to prepare the pollen, or vivifying dust, which is essential for the impregnation of the pistil, or female part of the flower. The stamens consist of two parts, viz. the *filament* and *anther*.

1. The filament (*filamentum*) is a thread-like substance which elevates the anther, and connects it with the flowers: It is of different lengths, and sometimes so short as to be scarcely distinguishable.

2. The anther (*anthera*) is situated on the summit of the filament, and contains the pollen, or fine dust, which it discharges when ripe.

IV. The pistil (*pistillum*) is the female part of the flower destined for the reception of the pollen. It consists of three parts, viz. the *Germen*, *Style*, and *Stigma*.

1. The Germen (*germen*) is the base of the pistil, and after a certain process of nature, becomes a seed vessel, and may therefore be considered as the rudiment of the fruit.

2. Style (*stylus*) is that part of the pistil, which proceeding from the germen, elevates the stigma. In those flowers which are destitute of a style, the stigma adheres to the germen.

3. The Stigma (*stigma*) is, when single, usually placed like a head on the summit of the style: but when more numerous, they are either placed on the top, or regularly disposed along the side; and bedewed with moisture, in order to retain the pollen which falls from the anthers.

V. The Pericarp (*pericarpium*) is the mature germen, within which the seeds are contained. Eight different species are enumerated by Linnæus, viz. *Capsule*, *Silique*, *Legume*, *Follicle*, *Drupe*, *Pome*, *Berry*, and *Strobile*.

1. A Capsule (*capsula*) is a dry hollow pericarp, or seed-vessel, which opens in a determinate manner (as in the Poppy) and by a kind of elastic motion the seeds contained in it are dispersed with considerable velocity.

2. Silique (*siliqua*) is a membranous seed-vessel consisting of two valves (as in mustard, &c.) and the seeds in both are attached by means of a slender thread-like substance, to the sutures or joining of the valves.

3. A Legume (*legumen*) is a two-valved seed-vessel, as the Pea, &c. in which the seeds are attached to short receptacles along the upper suture, alternately on each side.

4. A Follicle (*folliculus*) is a one-valved seed-vessel, which has not the seeds attached to the suture or sides of the valve, but to the receptacle.

5. A Drupe (*drupa*) is a succulent, or pulpy seed-vessel, without a valve, or external opening: it contains within its substance a nut or stone, as in *Plumb*, *Cherry*, &c.

6. A Pome (*pomum*) is likewise a succulent or pulpy seed-vessel without a valve, but furnished in the middle with a membranous capsule, having several cells or cavities containing the seeds, as in the *Pear*, &c.

7. A Berry (*bacca*) is, also, a valve-less seed vessel, inclosing one or more seeds, which are without any other covering, as in *Gooseberry*, &c.

8. A Strobile (*strobilus*) is a kind of seed vessel formed from an Ament: it is composed of woody scales placed against each other in the form of a cone, opening only at the upper part of the scales, and being firmly attached below to a kind of axis or receptacle, occupying the middle of the cone, as in the *Pine*, &c.

VI. A Seed (*semen*) is the rudiment of the future plant, and is defined by Linnæus to be the deciduous part of a plant
con-

containing the embryo of a new vegetable, fertilized by the aspersion of the pollen. Seeds are composed of three principal parts, viz. the *Corcle*, *Cotyledons*, and *Integuments*.

1. The *Corcle* (*corculum*) is the essence of the seed, and the rudiment of the new plant. It consists of two parts; the *plumule*, or scaly ascending part, which becomes the stem or trunk of the plant; and the *rostel*, or descending part, which becomes the root.

2. The *Cotyledons* (*cotyledones*) are the side lobes of the seed, consisting of farinaceous matter, and appear to be intended to furnish nourishment to the young plant, as they wither and die away when it has attained its full growth. They are termed *seed-lobes* while they remain at rest within the seed, and *seed-leaves* when they relinquish the seed, and rise above the surface of the ground. Some plants have only one cotyledon, as in *Grasses*, &c. others two, as the *Vetch*, &c. *Flax* has four, the *Cypress* five, and the *Pine-tree* ten. This part in *Ferns*, *Mosses*, &c. have not yet been sufficiently ascertained.

3. The *Integuments* (*integumenta*) are the coats investing the corcle and cotyledons, and are divided into the *shell* and *internal membrane*.

1. The *Shell* (*testa*) is the external covering, except when there are more than two proper coats, and then the second from the kernel is termed the shell.

2. The *Internal Membrane* (*membrana interna*) is sometimes wanting, and sometimes so identified with the external integument, as scarcely to be distinguished, or separated from it.

VIII. The *Receptacle* (*receptaculum*) is the base which supports and connects the other parts of the fructification with the plant, and is either proper or common. A proper
receptacle

receptacle supports the parts of a single fructification only, a common receptacle elevates and connects several flowers, and their fruit.

The receptacle is likewise discriminated, as it elevates one or more of the parts of a single fructification, being termed

<i>The Receptacle of the</i>	{	<i>Fructification</i> , when it supports both the flower, and fruit.
		<i>Flower</i> , when it elevates the flower, and not the fruit.
		<i>Fruit</i> , when it supports the fruit, but not the flower.
		<i>Seeds</i> , when it constitutes the base to which the seeds are attached within the seed-vessel.

All these different parts are not found in the fructification of every plant, but none are without a receptacle.

Flowers are denominated complete, which have both a calyx and corol, and incomplete when either of those parts is wanting.

Those possessing both stamens and pistils, are termed hermaphrodite, or perfect flowers; and when destitute of either of these parts, they are called imperfect flowers: and it is from the number, figure, proportion, position, and other circumstances attending the different parts of fructification, that the classes of vegetables, and the genera they contain, are characterised in the *Sexual System*.

EXPLANATION OF THE PLATE.

*Plate IV.*

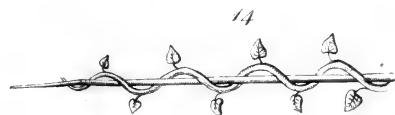
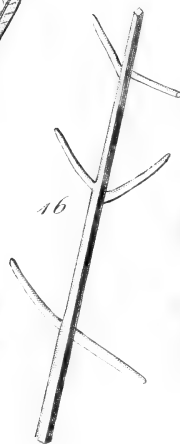
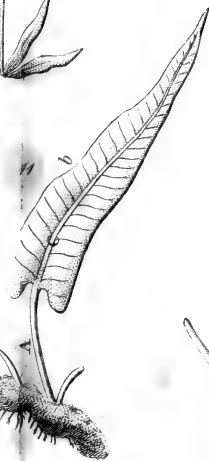
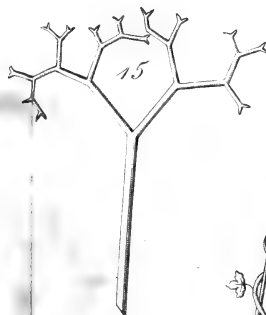
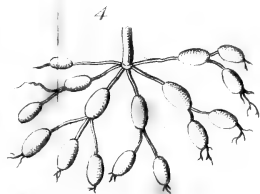
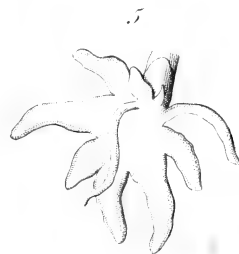
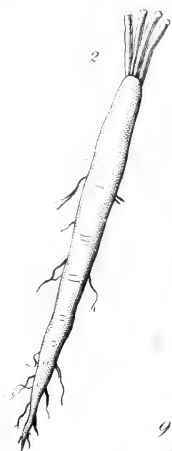
ROOTS.

- Fig.* 1. A Branched or Ramose Root.
 2. A Spindle-shaped or Fusiform Root.
 3. A Creeping or Repent Root.
 4. A Knobbed or Tuberous Root.
 5. A Hand-shaped or Palmated Root.
 6. A Solid Bulb.
 7. A Transverse Section of a coated, or tunicated Bulb.
 8. A Scaly or Squamose Bulb.

STEMS.

9. A Jointed, or Articulated Culm.
 10. A Scape.
 11. A Frond; *a* the stipe, or stalk; *b* the leaf; *c* the mid-rib.
 12. A Creeping or Repent Stem.
 13, 14. A Twining, or Voluble Stem.
 15. A Bifurcated or Dichotomous Stem.
 16. A Double-branched or Brachiate Stem.

24



CHAPTER II.

Of the Divisions of the Linnæan System.

LINNÆUS has divided the vegetable kingdom into Classes, Orders, Genera, Species, and Varieties. The classes are composed of orders, the orders of genera, the genera of species, the species of varieties, and the varieties of individuals.

In order to convey a more familiar idea of the relation in which these divisions and subdivisions stand in to each other, they have been aptly compared to the inhabitants of our globe.

Vegetables resemble the Inhabitants in general.

Classes the Nations.

Orders the Tribes.

Genera the Families.

Species the Individuals.

And *Varieties* the same Individuals under different circumstances.

In the Sexual System the classes, or primary divisions, are twenty-four; the characters of which are taken either from the number, proportion, connection, or situation of the stamens or males.

The first twenty-three classes include all plants which have conspicuous flowers, stamens, and pistils; the last all those the stamens and pistils of which are too minute to be

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discerned

discerned by the naked eye, or have hitherto escaped the observation of botanists.

The Orders, or secondary divisions, are much more numerous than the classes : their characters are most frequently taken from the number of the pistils, but sometimes from the number, connection, and insertion of the stamens, and other circumstances.

The Genera are extremely numerous, and are characterised from the parts of the fructification.

The Species are for the most part characterised from some peculiarities in the stem or leaves ; sometimes from parts of the flower, but very seldom from the root.

The Varieties, both of the leaves and flowers, depend in a great measure on soil, situation, and climate. The seeds of these do not always produce a vegetable similar to the parent plant, as may be observed in numerous fruit trees, garden flowers, &c.

I. OF THE CLASSES.

The first eleven classes comprehend those plants, in the flowers of which both the sexes are found, and in which the males or stamens are not united, and are of the same height when arrived at maturity. They are distinguished from each other by the number of males in each flower.

Class I. Monandria.

Includes the plants which possess one stamen in an hermaphrodite, or perfect flower.

II. Diandria.

Two stamens—flower hermaphrodite.

III. Tri-

III. Triandria.

Three stamens—flower hermaphrodite.

IV. Tetrandria.

Four stamens—flower hermaphrodite.

V. Pentandria.

Five stamens—flower hermaphrodite.

VI. Hexandria.

Six stamens—flower hermaphrodite.

VII. Heptandria.

Seven stamens—flower hermaphrodite.

VIII. Octandria.

Eight stamens—flower hermaphrodite.

IX. Enneandria.

Nine stamens—flower hermaphrodite.

X. Decandria.

Ten stamens—flower hermaphrodite.

XI. Dodecandria.

Twelve to nineteen stamens—flower hermaphrodite.

The two following classes are characterised not only by the number of equal and disunited stamens, as in the above eleven classes, but by their insertion in the inside of the calyx, or receptacle.

XII. Icosandria.

Twenty stamens (frequently more, sometimes fewer) inserted in the inside of the calyx—flower hermaphrodite.

XIII. Polyandria.

More than twenty stamens inserted in the receptacle—flower hermaphrodite.

In the next two classes not only the number of the stamens must be attended to, but the reciprocal proportions with regard to height.

XIV. Didynamia.

Four stamens, two long and two short—flower hermaphrodite.

XV. Tetradynamia.

Six stamens; the two opposite ones shorter than the other four—flower hermaphrodite.

The five following classes are not distinguished by the number of stamens, but by their union or adhesion, either by their anthers or filaments, to the pistil.

XVI. Monadelphica.

Many stamens, united at their base into one set or brotherhood—flower hermaphrodite.

XVII. Diadelphia.

Many stamens, united at their base into two sets or brotherhoods—flower hermaphrodite.

XVIII. Polyadelphia.

Many stamens, united at their base into three or more sets or brotherhoods—flower hermaphrodite.

XIX. Syn-

XIX. Syngenesia.

Many stamens united by their anthers (seldom by their filaments) into a cylinder—flower hermaphrodite.

XX. Gynandria.

Many stamens inserted in the pistils, not in the receptacle.

The three subsequent classes consist of plants, the flowers of which contain only one of the sexes; or if some of them comprehend both sexes, they are still accompanied by other flowers containing but one sex.

XXI. Monoecia.

The stamens and pistils in separate flowers, but on the same individual plant.

XXII. Dioecia.

The stamens and pistils in separate flowers, and on different plants.

XXIII. Polygamia.

Hermaphrodite and imperfect flowers, or both on the same or different plants of the same species.

The last class contains those plants the flowers of which are scarcely discernable.

XXIV. Cryptogamia.

Flowers concealed within the fruit, or in some other manner, and the stamens and pistils so minute as scarcely to be observed by the naked eye.

II. OF THE ORDERS.

The Orders constitute the secondary divisions of the sexual system, and are much more numerous than the classes.

Their characters are taken from different circumstances, viz.

1. From the number of pistils, as *Monogynia*, &c.
2. From the absence of a pericarp, or the seeds being naked, as *Gymnospermia*.
3. From the presence, or nature of the pericarp, as *Angiospermia*, *Siliculosa*, *Siliquosa**.
4. From the number, connection, and insertion of the stamens, as *Monandria*, *Monadelphica*, *Syngenesia*, *Gynandria*.
5. From the nature and disposition of the florets, as *Polygamia Æqualis*, *Polygamia Superflua*, &c.
6. From the number of houses occupied by plants of one species, as *Monoecia*, *Dioecia*, *Trioecia*.

In the first thirteen classes the orders derive their names from the number of pistils, which is to be taken from the base of the style if present; and if the style be absent, from the number of the stigmas.

Class I. *Monandria*.

- Order 1. *Monogynia*, pistil one) in an hermaphrodite
 2. *Digynia*, pistils two) flower.

* A Silicle is a Pericarp somewhat round, composed of two valves, with the seeds attached to both sutures, and furnished with a style, which is frequently longer than the silicle.

A Silique is a long two-valved Pericarp, in which the seeds are attached to both sutures, and have only a very short style.

II. *Dian*;

II. *Diandria*.

- Order 1. *Monogynia*, pistil one }
 2. *Digynia*, pistils two } in an hermaphrodite
 3. *Trigynia*, pistils three } flower.

III. *Triandria*.

- Order 1. *Monogynia*, pistil one }
 2. *Digynia*, pistils two } in an hermaphrodite
 3. *Trigynia*, pistils three } flower.

IV. *Tetrandria*.

- Order 1. *Monogynia*, pistil one }
 2. *Digynia*, pistils two } in an hermaphrodite
 3. *Tetragynia*, pistils four } flower.

V. *Pentandria*.

- Order 1. *Monogynia*, pistil one }
 2. *Digynia*, pistils two }
 3. *Trigynia*, pistils three } in an hermaphrodite
 4. *Tetragynia*, pistils four } flower.
 5. *Pentagynia*, pistils five }
 6. *Polygynia*, pistils many }

VI. *Hexandria*.

- Order 1. *Monogynia*, pistil one }
 2. *Digynia*, pistils two }
 3. *Trigynia*, pistils three } in an hermaphrodite
 4. *Tetragynia*, pistils four } flower.
 5. *Polygynia*, pistils many }

VII. *Heptandria*.

- Order 1. *Monogynia*, pistil one }
 2. *Digynia*, pistils two }
 3. *Tetragynia*, pistils four } in an hermaphrodite
 4. *Heptagynia*, pistils seven } flower.

VIII. *Octandria*.

- Order 1. *Monogynia*, pistil one
 2. *Digynia*, pistils two
 3. *Trigynia*, pistils three
 4. *Tetragynia*, pistils four
- } in an hermaphrodite flower.

IX. *Enneandria*.

- Order 1. *Monogynia*, pistil one
 2. *Trigynia*, pistils three
 3. *Hexagynia*, pistils six
- } in an hermaphrodite flower.

X. *Decandria*.

- Order 1. *Monogynia*, pistil one
 2. *Digynia*, pistils two
 3. *Trigynia*, pistils three
 4. *Pentagynia*, pistils five
 5. *Decagynia*, pistils ten
- } in an hermaphrodite flower.

XI. *Dodecandria*.

- Order 1. *Monogynia*, pistil one
 2. *Digynia*, pistils two
 3. *Trigynia*, pistils three
 4. *Dodecagynia*, pistils 12
- } in an hermaphrodite flower.

XII. *Icosandria*.

- Order 1. *Monogynia*, pistil one
 2. *Digynia*, pistils two
 3. *Trigynia*, pistils three
 4. *Pentagynia*, pistils five
 5. *Polygynia*, pistils many
- } in an hermaphrodite flower.

XIII. *Poly-*

XIII. *Polyandria*.

- | | |
|--|----------------------------------|
| Order 1. <i>Monogynia</i> , pistil one | } in an hermaphrodite
flower. |
| 2. <i>Digynia</i> , pistils two | |
| 3. <i>Trigynia</i> , pistils three | |
| 4. <i>Titragynia</i> , pistils four | |
| 5. <i>Pentagynia</i> , pistils five | |
| 6. <i>Hexagynia</i> , pistils six | |
| 7. <i>Polygynia</i> , pistils many | |

In the fourteenth class, the names and characters of the orders are taken from the presence or absence of a pericarp, or seed-vessel.

XIV. *Didynamia*.

- Order 1. *Gymnospermia*, seeds naked.
 2. *Angiospermia*, seeds in a pericarp.

In the fifteenth class, the names and characters of the orders are taken from the nature of the pericarp, or seed-vessel.

XV. *Tetradynamia*.

- Order 1. *Siliculosa*, seed in a small round pod.
 2. *Siliquosa*, seed in a long large pod.

In the three following classes the names and characters of the orders are taken from the number of the stamens.

XVI. *Monadelphina*.

- Order 1. *Triandria*, stamens three.
 2. *Pentandria*, stamens five.
 3. *Enneandria*, stamens nine.
 4. *Decandria*, stamens ten.
 5. *Endecandria*, stamens eleven.
 6. *Dodecandria*, stamens twelve.
 7. *Polyandria*, stamens many.

XVII. *Diadelphia*.

- Order 1. *Pentandria*, stamens five.
 2. *Hexandria*, stamens six.
 3. *Octandria*, stamens eight.
 4. *Decandria*, stamens ten.

XVIII. *Polyadelphia*.

- Order 1. *Pentandria*, stamens five
 2. *Icosandria*, stamens twenty
 3. *Polyandria*, stamens many } in each set.

In the nineteenth class, the orders take their names and characters from the nature and disposition of the florets.

XIX. *Syngenesia*.

- Order 1. *Polygamia æqualis*. Florets all hermaphrodite.
 2. *Polygamia superflua*. Florets of the centre hermaphrodite; of the radius female, and both fertile.
 3. *Polygamia frustranea*. Florets of the centre hermaphrodite and fertile; of the radius female and barren.
 4. *Polygamia necessaria*. Florets of the centre hermaphrodite, but barren; of the radius female and fertile.
 5. *Polygamia segregata*. Within the common calyx, many partial calyxes separating the florets.
 6. *Monogamia*. A single perfect flower, having the anthers united with each other.

In the twentieth class the names and characters of the orders are taken solely from the number of the stamens.

XX. *Gynandria*.

- Order 1. *Diandria*, stamens two.
 2. *Triandria*, stamens three.
 3. *Tetrandria*, stamens four.
 4. *Pentandria*, stamens five.
 5. *Hexandria*, stamens six.
 6. *Octandria*, stamens eight.
 7. *Decandria*, stamens ten.
 8. *Dodecandria*, stamens twelve.
 9. *Polyandria*, stamens many.

In the twenty-first and twenty-second class, besides the orders which are taken and named from the number of stamens, there are others which are characterised from the connection and insertion of the stamens.

XXI. *Monoecia*.

- | | | | |
|----------|----------------------|--|--------------------|
| Order 1. | <i>Monandria</i> , | stamen one | } in a male flower |
| 2. | <i>Diandria</i> , | stamens two | |
| 3. | <i>Triandria</i> , | stamens three | |
| 4. | <i>Tetrandria</i> , | stamens four | |
| 5. | <i>Pentandria</i> , | stamens five | |
| 6. | <i>Hexandria</i> , | stamens six | |
| 7. | <i>Heptandria</i> , | stamens seven | |
| 8. | <i>Polyandria</i> , | stamens many | |
| 9. | <i>Monodelphia</i> , | stamens united
by their filaments
into one set | |
| 10. | <i>Syngenesia</i> , | stamens united
by their anthers | } |
| 11. | <i>Gynandria</i> , | stamens inserted
in the pistils | |

XXII. *Dioecia.*

Order 1.	<i>Monandria,</i>	stamen one	} in a male flower,
2.	<i>Diandria,</i>	stamens two	
3.	<i>Triandria,</i>	stamens three	
4.	<i>Tetrandria,</i>	stamens four	
5.	<i>Pentandria,</i>	stamens five	
6.	<i>Hexandria,</i>	stamens six	
7.	<i>Octandria,</i>	stamens eight	
8.	<i>Enneandria,</i>	stamens nine	
9.	<i>Decandria,</i>	stamens ten	
10.	<i>Dodecandria,</i>	stamens twelve	
11.	<i>Polyandria,</i>	stamens many	
12.	<i>Monodelphia,</i>	stamens united by their filaments into one set	
13.	<i>Syngenesia,</i>	stamens united by their anthers	
14.	<i>Gynandria,</i>	stamens inserted in the pistils.	

In the twenty-third class the orders derive their names and characters from the number of houses, or plants of one species, in which the flowers are found.

XXIII. *Polygamia.*

Order 1.	<i>Monoecia.</i>	Polygamy on the same plant.
2.	<i>Dioecia.</i>	Polygamy on the different plants.
3.	<i>Trioecia.</i>	Polygamy on three different plants.

XXIV. *Cryp-*

XXIV. *Cryptogamia.*

- Order 1. *Filices.* Fructification on the back, or margin of the leaf.
2. *Musci.* Anthers sessile.
3. *Algæ.* Root, stem, and leaf, all in one.
4. *Fungi.* Fructification disposed betwixt gills, in tubes, &c.



When the student has sufficiently familiarised himself with the definitions of the classes and orders, he may proceed to the examination of the flowers, which are subjoined, as examples of each class and order. Before entering on this examination, however, he should provide himself with a few botanical instruments; viz. a small knife, a needle, and a pair of forceps. A small pair of scissars will likewise be found very useful for removing the calyx and corol, in order fully to display the stamens and pistils.

For examining those flowers, the stamens and pistils of which are too minute to be observed by the naked eye, he should likewise be provided with a microscope, with one or two lenses, and of such a form, that it may be held in one hand at the same time with the plant, by which means the other will be at liberty to display the different parts of the flower. In the investigation of plants belonging to the class cryptogamia, a glass with a very high magnifying power should be employed.

Flowers, for the purpose of examination, should be collected in all the different stages of their progress, from the unopened bud to the fruit nearly approaching maturity. For

although the stamens and pistils are in general best observed in the expanded state of the flower, yet as they are apt to drop off occasionally, we can only ascertain their number with precision, by comparing them with those contained in an unexpanded flower. Besides, as the characters of a few orders are derived from the seeds and pericarp, it is essential to have some flowers in which the germen has passed into the fruit. -

The specimens, when collected, should be placed in a tin box of such a form and size, that it may be readily carried in the pocket.



EXPLANATION

EXPLANATION OF THE PLATE.

*Plate VII.*

- | | |
|---------------------------|-----------------------------|
| <i>Fig. 1.</i> Monandria. | <i>Fig. 13.</i> Polyandria. |
| 2. Diandria. | 14. Didynamia. |
| 3. Triandria. | 15. Tetradynamia. |
| 4. Tetrandria. | 16. Monadelphia. |
| 5. Pentandria. | 17. Diadelphia. |
| 6. Hexandria. | 18. Polyadelphia. |
| 7. Heptandria. | 19. Syngenesia. |
| 8. Octandria. | 20. Gynandria. |
| 9. Enneandria. | 21. Monoecia. |
| 10. Decandria. | 22. Dioecia. |
| 11. Dodecandria. | 23. Polygamia. |
| 12. Icosandria. | 24. Cryptogamia. |

A delineation of each order belonging to this last class is here given.

A. Filices.

B. Musci. *a* The Calyptræ.

C. Algæ.

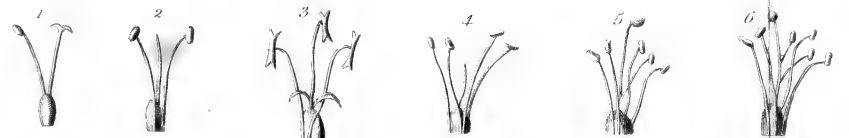
D. Fungi. *a* The Pileus, *b* The Curtain, *c* The Stipe, *d* the Wrapper.

The number, situation, connection, and proportion of the stamens are represented in the plate, as they occur in the different classes of the sexual system.

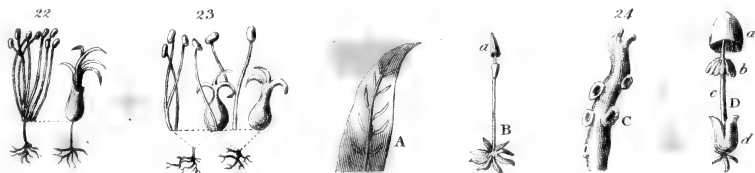
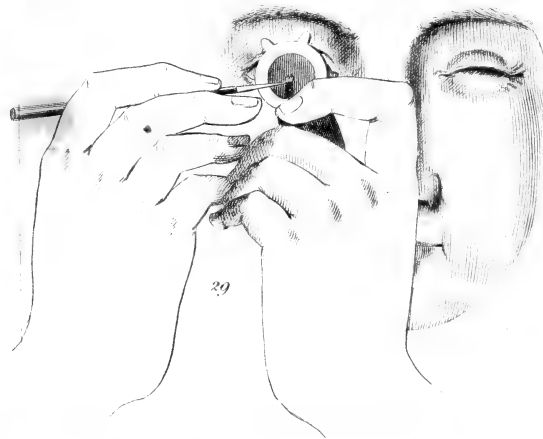
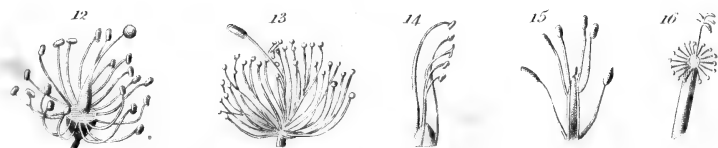
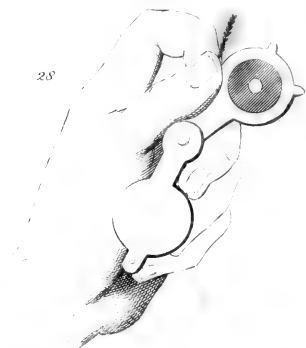
BOTANICAL INSTRUMENTS.

25. A Knife.
26. A pair of Forceps.
27. A Needle.
28. A Pocket Microscope, with the mode of holding it, and the object to be examined in one hand.
29. The Microscope and a Plant applied to the eye with one hand, whilst the other is employed in displaying the parts with the botanical needle.

EXAMPLES.



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EXAMPLES.

Class I. *Monandria.*

Order <i>Monogynia</i>	Samphire (<i>Salicornia</i>)
	Mare's Tail (<i>Hippuris</i>)
<i>Digynia</i>	Star Grass (<i>Callitriche</i>)

Class II. *Diandria.*

Order <i>Monogynia</i>	Milfoil (<i>Utricularia</i>)
	Privet (<i>Ligustrum</i>)
	Speed-well (<i>Veronica</i>)
<i>Digynia</i>	Spring-grass (<i>Anthoxanthum</i>)

Class III. *Triandria.*

Order <i>Monogynia</i>	Saffron (<i>Crocus</i>)
	Valerian (<i>Valeriana</i>)
<i>Digynia</i>	Quake-grass (<i>Briza</i>)
	Dog's-tail (<i>Cynosurus</i>)
	Millet (<i>Milium</i>)
<i>Trigynia</i>	Mouse-ear (<i>Holosteum</i>)
	Chick-weed (<i>Montia</i>)

Class IV. *Tetrandria.*

Order <i>Monogynia</i>	Teasel (<i>Dipsacus</i>)
	Plantain (<i>Plantago</i>)
<i>Digynia</i>	Dodder (<i>Cuscuta</i>)
<i>Tetragynia</i>	Holly (<i>Ilex</i>)
	Pond-weed (<i>Potamogeton</i>)

Class

Class V. Pentandria.

Order <i>Monogynia</i>	Honeysuckle (<i>Lonicera</i>)
	Primrose (<i>Primula</i>)
	Borage (<i>Borago</i>)
<i>Digynia</i>	Carrot (<i>Daucus</i>)
	Gentian (<i>Gentiana</i>)
	Goosefoot (<i>Chenopodium</i>)
<i>Trigynia</i>	Elder (<i>Sambucus</i>)
	Guelder Rose (<i>Viburnum</i>)
<i>Tetragynia</i>	Grass of Parnassus (<i>Parnassia</i>)
<i>Pentagynia</i>	Flax (<i>Linum</i>)
	Thrift (<i>Statice</i>)
<i>Polygynia</i>	Little Mouse Tail (<i>Myosurus</i>)

Class VI. Hexandria.

Order <i>Monogynia</i>	Barberry (<i>Berberis</i>)
	Tulip (<i>Tulipa</i>)
	Daffodil (<i>Narcissus</i>)
<i>Trigynia</i>	Arrow-grass (<i>Triglochin</i>)
<i>Polyginia</i>	Thrum-wort (<i>Alisma</i>)

Class VII. Heptandria.

Order <i>Monogynia</i>	Winter-green (<i>Trientalis</i>)
	Horse-chesnut (<i>Hippocastanum</i>)

Class VIII. Octandria.

Order <i>Monogynia</i>	Whortle-berry (<i>Vaccinium</i>)
	Heath (<i>Erica</i>)
<i>Trigynia</i>	Buck-wheat (<i>Polygonum</i>)
<i>Tetragynia</i>	Moschatel (<i>Adoxa</i>)

Class

Class IX. *Enneandria*.

Order *Hexagynia* Flowering Rush (*Butomus*)

Class X. *Decandria*.

Order *Monogynia* Wild Rosemary (*Andromeda*)
Digynia Sweet William (*Dianthus*)
Trigynia Sand-wort (*Arenaria*)
 Catch-fly (*Silene*)
Pentagynia Wood-sorrel (*Oxalis*)
 Campion (*Lychnis*)

Class XI. *Dodecandria*.

Order *Monogynia* Willow-herb (*Lythrum*)
 Asarabacca (*Asarum*)
Digynia Agrimony (*Agrimonia*)
Trigynia Spurge (*Euphorbia*)
 Dyer's Weed (*Reseda*)
Dodecagynia House-leek (*Sempervivum*)

XII. *Icosandria*.

Order *Monogynia* Plumb (*Prunus*)
Digynia Hawthorn (*Cratægus*)
Trigynia, Mountain Ash (*Sorbus*)
Pentagynia Pear (*Pyrus*)
 Meadow-sweet (*Spiræa*)
Polygynia Rose (*Rosa*)
 Rasp-berry (*Rubus*)
 Straw-berry (*Fragaria*)

Class

Class XIII. Polyandria.

Order <i>Monogynia</i>	<i>Cistus</i> (<i>Cistus</i>)
	<i>Poppy</i> (<i>Papaver</i>)
<i>Trigynia</i>	<i>Larkspur</i> (<i>Delphinium</i>)
<i>Pentagynia</i>	<i>Columbine</i> (<i>Aquilegia</i>)
<i>Polyginia</i>	<i>Crow-foot</i> (<i>Ranunculus</i>)
	<i>Marsh Marygold</i> (<i>Caltha</i>)

Class XIV. Didynamia.

Order <i>Gymnospermia</i>	<i>Ground-ivy</i> (<i>Glechoma</i>)
	<i>Skull-cap</i> (<i>Scutellaria</i>)
	<i>Mint</i> (<i>Mentha</i>)
	<i>Self-heal</i> (<i>Prunella</i>)
	<i>Thyme</i> (<i>Thymus</i>)
<i>Angiospermia</i>	<i>Fox-glove</i> (<i>Digitalis</i>)
	<i>Louse-wort</i> (<i>Pedicularis</i>)
	<i>Fig-wort</i> (<i>Scrophularia</i>)
	<i>Yellow-Rattle</i> (<i>Rhinanthus</i>)

Class XV. Tetradynamia.

Order <i>Siliculosa</i>	<i>Shepherd's Purse</i> (<i>Thlaspi</i>)
	<i>Candytuft</i> (<i>Iberis</i>)
	<i>Scurvy-grass</i> (<i>Cochlearia</i>)
	<i>Whitlow-grass</i> (<i>Draba</i>)
<i>Siliquosa</i>	<i>Radish</i> (<i>Raphanus</i>)
	<i>Ladies Smock</i> (<i>Cardamine</i>)
	<i>Wall-flower</i> (<i>Cheiranthus</i>)
	<i>Mustard</i> (<i>Sinapis</i>)

Class

Class XVI. Monadelphia.

Order <i>Decandria</i>	Crane's-bill (<i>Geranium</i>)
<i>Polyandria</i>	Marsh-mallow (<i>Althæa</i>)
	Mallow (<i>Malva</i>)

Class XVII. Diadelphia.

Order <i>Hexandria</i>	Fumitory (<i>Fumaria</i>)
<i>Octandria</i>	Milk-wort (<i>Polygala</i>)
<i>Decandria</i>	Green-weed (<i>Genista</i>)
	Grass-vetch (<i>Lathyrus</i>)
	Whin or Furze (<i>Ulex</i>)
	Vetch (<i>Vicia</i>)
	Broom (<i>Genista</i>)

Class XVIII. Polyadelphia.

Order <i>Polyandria</i>	St. John's Wort (<i>Hypericum</i>)
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Class XIX. Syngenesia.

Order <i>Polygamia Æqualis</i>	Swine's Succory (<i>Hyoseris</i>)
	Goat's-beard (<i>Tragopogon</i>)
	Dandelion (<i>Leontodon</i>)
	Burdock (<i>Arctium</i>)
	Thistle (<i>Carduus</i>)
<i>Polygamia Superflua</i>	Groundsel (<i>Senecio</i>)
	Daisy (<i>Bellis</i>)
	Chamomile (<i>Anthemis</i>)
<i>Polygamia Frustranea</i>	Blue Bottle (<i>Centaurea</i>)
<i>Polygamia Necessaria</i>	Marygold (<i>Calendula</i>)
<i>Polygamia Segregata</i>	Globe-Thistle (<i>Echinops</i>)
<i>Monogamia</i>	Gladiolus (<i>Lobelia</i>)
	Violet (<i>Viola</i>)
	Touch-me-not (<i>Impatiens</i>)

Class XX. *Gynandria*.

Order <i>Diandria</i>	Ladies-Slipper (<i>Cypripedium</i>) Orchis (<i>Orchis</i>)
<i>Hexandria</i>	Birth-wort (<i>Aristolochia</i>)
<i>Polyandria</i>	Wake-Robin (<i>Arum</i>)

Class XXI. *Monoecia*.

Order <i>Monandria</i>	Stone-wort (<i>Chara</i>)
<i>Diandria</i>	Duck-meat (<i>Lemna</i>)
<i>Triandria</i>	Seg or Sedge (<i>Carex</i>) Bur-reed (<i>Sparganium</i>) Cat's-tail (<i>Typha</i>)
<i>Tetrandria</i>	Birch (<i>Betula</i>) Box (<i>Buxus</i>) Shore-weed (<i>Littorella</i>)
<i>Pentandria</i>	Less Burdock (<i>Xanthium</i>)
<i>Polyandria</i>	Mill-foil (<i>Myriophyllum</i>) Arrow-head (<i>Sagittaria</i>)

Class XXII. *Dioecia*.

Order <i>Diandria</i>	Willow (<i>Salix</i>)
<i>Triandria</i>	Crake-berry (<i>Empetrum</i>)
<i>Tetrandria</i>	Mistletoe (<i>Viscum</i>)
<i>Pentandria</i>	Hop (<i>Humulus</i>)
<i>Hexandria</i>	Black Briony (<i>Tamus</i>)
<i>Octandria</i>	Poplar (<i>Populus</i>) Rose-wort (<i>Rhodiola</i>)
<i>Enneandria</i>	Mercury (<i>Mercurialis</i>) Frog-bite (<i>Hydrocharis</i>)
<i>Monadelphina</i>	Juniper (<i>Juniperus</i>) Yew (<i>Taxus</i>)
<i>Syngenesia</i>	Butcher's-broom (<i>Ruscus</i>)

Class

Class XXIII. Polygamia.

Order <i>Monoecia</i>	Sycamore (<i>Acer</i>)
	Orache (<i>Atriplex</i>)
<i>Dioecia</i>	Ash (<i>Fraxinus</i>)
<i>Trioecia</i>	Carob Tree (<i>Ceratonia</i>)
	Fig (<i>Ficus</i>)

Class XXIV. Cryptogamia.

Order <i>Filices</i>	Horse-tail (<i>Equisetum</i>)
	Brakes or Fern (<i>Pteris</i>)
	Maiden-hair (<i>Adiantum</i>)
<i>Musci</i>	Club-moss (<i>Lycopodium</i>)
	Bog-moss (<i>Sphagnum</i>)
	Water-moss (<i>Fontinalis</i>)
<i>Algæ</i>	Wrack or Sea-weed (<i>Fucus</i>)
	Liver-wort (<i>Lichen</i>)
	Laver (<i>Ulva</i>)
<i>Fungi</i>	Agaric (<i>Agaricus</i>)
	Puff-ball (<i>Lycoperdon</i>)
	Cup-Mushroom (<i>Peziza</i>)



A greater number of examples are given above than is necessary to be investigated by any one individual. They are intended to accommodate those who are acquainted with few plants by sight and name, or who commence the study of Botany at different seasons of the year, when only a part of them are in blossom; as well as those who live in different parts of the kingdom, and cannot have access to the whole

whole of them; some plants being extremely common in one district, which are very rare, or not to be found at all in another.

After the examination of a sufficient number of these examples, the student may next attempt the investigation of the class and order of plants which are unknown to him, beginning with those which have hermaphrodite or perfect flowers of a large size.

1st. If the flowers have all stamens and pistils, the plant appertains to one of the first twenty classes; when they have only stamens or pistils, or if some have only stamens or pistils, and others have both, the plant must be referred to the twenty-first, twenty-second, or twenty-third class.

2d. Having thus ascertained the flowers to be perfect, the stamens must be next examined; and if these are found to be all of an equal length, not connected with each other by their filaments or anthers, nor inserted in the pistil, the plant belongs to one of the first thirteen classes. When the number of stamens are below twelve, the class is determined by merely counting them; but should they be twelve, or exceed that number, besides counting them, it is necessary to determine if they be inserted in the calyx, or receptacle: when they are from twelve to nineteen, and inserted in the latter, the plant must be referred to the class Dodecandria: if they amount to nearly twenty, and be attached to the inside of the calyx, it belongs to Icosandria: if twenty, or upwards, and inserted in the receptacle, it is to be regarded as appertaining to Polyandria. Having once ascertained to which of these classes the plant under examination belongs, the order must be determined from the number of pistils: if there be only one pistil, it belongs to Monogynia; if

two to Digynia; when three to Trigynia; and so on with the next.

3. When the flowers are all hermaphrodite, and the stamens are four or six in number, and two of them constantly shorter than the rest, the plants in the first case may be referred to the class Didynamia, and in the last to Tetradynamia.

When the plant appertains to the former class, Didynamia, the order must not be determined by the number of pistils, for the pistil is always single; but by observing if the seed be naked, or inclosed in a pericarp or seed-vessel. When four naked seeds are found in the bottom of the calyx, the plant belongs to the order Gymnospermia; but when the seeds are contained in a seed-vessel, to Angiospermia.

Should it be found to belong to the last class, Tetradynamia, the order must be determined by the form of the pericarp. If this be a Silicle, it is to be referred to the first order, Siliculosa; if a Silique, to the second order, Siliquosa.

4. When all the flowers are hermaphrodite, and the stamens connected by their filaments into one brotherhood, or set, the plant appertains to the class Monadelphia; if into two sets, to Diadelphia, and if into three or more sets, to Polyadelphia.

In the whole of these three classes the orders are determined without difficulty, being established solely on the number of the stamens.—*See page 33.*

5. When the flowers are hermaphrodite, and the anthers united into a cylindrical tube, the plant appertains to the class Syngenesia. The order is determined from the sex and disposition of the florets.—*See page 34.*

6. When the stamens are inserted in the pistil, the plant must be referred to the class Gynandria. Linnæus has placed some plants in this class which have an elongated

receptacle like a style, into which the stamens and pistils are inserted.

The orders of this class are determined by the number of the stamens.—*See page 35.*

7. A plant which contains only imperfect flowers, must be referred to the class Monoecia, if it be androgynous, or carry both male or female flowers; and to Dioecia, when the male flowers are on one individual, and the female flowers on another.

The orders are determined from the number or connection of the stamens.—*See pages 35, 36.*

8. If both perfect and imperfect flowers are found on the same plant, or on two or three different plants of the same species, and be neither inclosed within the same common calyx, nor situated on the same common receptacle, the plant must be referred to the class Polygamia. If the hermaphrodite, or the male or female plant occur singly, it may be conceived that a good deal of difficulty will attend the determination of this class: but except the common ash, we have no example among the indigenous plants of this island, in which the imperfect and hermaphrodite flowers are found on distinct individuals, so that it is only in the investigation of exotics, that any embarrassment will arise to the student from this source.

Neither will much difficulty attend the determination of the orders: for if we find imperfect and hermaphrodite flowers on the same individual, we may refer the plant to the order Monoecia: if they be on two separate individuals, to Dioecia; and if on three distinct individuals, the plant belongs to the order Trioecia.

To prevent any ambiguity from the number of the stamens and pistils being different in different flowers of the
same

same plant, it will be necessary to examine two or three unexpanded flowers, as in these none of the stamens or pistils can have dropt off: and should the same difference exist in these flowers with respect to the number of their stamens and pistils, the terminating flower must be chosen in determining the class and order: in some plants, for example, the lateral flowers have ten stamens and five pistils, but the terminating flower has only eight stamens and four pistils; hence the plant is referred to *Octandria Tetragynia*.

Too great attention can scarcely be paid to the investigation of the classes and orders; for if any error be committed in determining either of these two superior divisions, a great deal of difficulty will be experienced in the subsequent examination of the genus.

III. OF THE GENERA.

The Genera are the third subdivisions in the Linnæan System, and are extremely numerous. Some botanists have described no fewer than 1769.

However desirable it would be to have a complete nomenclature for the genera, expressive of the whole, or of the leading circumstances of their characters, like the names given to the classes and orders, yet their extensive number renders this altogether impracticable. In a very few instances, indeed, the names of the genera actually exhibit the essential character, or the habit of plants; yet still the greatest number are either taken from their qualities and uses, or are merely arbitrary.

The characters of the genera are derived entirely from the parts of fructification, and according to Linnæus are of three kinds viz. *Natural*, *Essential*, and *Factitious*.

1. The *Natural* character is derived from the number, figure, situation and proportion of all the different parts of fructification. It includes the marks from which the *essential* and *factitious* characters are formed, and may be applied to every system founded on the fructification as a basis. It does not, like the other two, require to be changed, whatever new genera may be discovered. The natural character of *Crambe* (*Sea Cabbage*) is here subjoined as an example.

Crambe.

Calyx. *Perianth* four leaved; *leaflets* ovate, channelled, somewhat spreading, deciduous.

Corol. Four-petalled, cruciform. *Petals* large, obtuse, broad, spreading. *Claws* erecto-patulous, as long as the calyx.

Stamens. *Filaments* six, *two* as long as the calyx, *four* longer, bifid at the summit. *Anthers* simple, on the external branch of the filaments. *A melliferous gland* between the corol, and longer stamens on both sides.

Pistil. *Germen* oblong. *Style* none. *Stigma* thickish.

Pericarp. *Berry* dry, globular, one-celled, deciduous.

Seed. Single roundish.

2. The *Essential* character exhibits the best adapted single mark of the genus, to which it is applied. It likewise serves to discriminate the genus from every other belonging to the same natural, as well as artificial order. As an example, the essential character of the above genus, *Crambe* is added.

Crambe. *Filaments* bifid at the apex.

3. The *Factitious* character serves to distinguish a genus from all the other genera belonging to the same artificial order only, and consists of no more marks than are necessary for this purpose*.

In endeavouring to investigate the genera, the same method must be pursued as has already been pointed out, with respect to the classes and orders. The student ought first to take some of the plants which have been given as examples of the classes and orders, and with which he is perfectly familiar; the parts of their fructification he should compare with the generic characters, till he has acquired a readiness in applying those terms which he has last studied; after which he may begin to examine, as far as the genus is concerned, any unknown plant.

In collecting specimens attention should be paid not only to have both unopened and expanded flowers, but likewise the fruit in an advanced state; since it frequently constitutes a very important part of the character. It is likewise proper to have the whole inflorescence, as it will sometimes assist in determining the subdivisions of the order.

The class and order being determined according to the rules given in page 48, the synoptical table of the genera must be examined; and if the order contain no divisions, the specimen may be immediately compared with the essential characters: if, however, the order be subdivided, we must previously ascertain to which of the divisions it belongs, and then compare it with the generic characters, contained in this division, till we discover one with which it appears to correspond.

* As it is usual with Botanical writers to consider the strictly essential characters, and the factitious or artificial ones, as the same, the first term is adopted to express both throughout this work.

The method of applying the above rules, is explained in the following examples:

Example I.

LIGUSTRUM (*Privet.*)

By inspecting the flowers of a plant belonging to this genus, and observing that each of them contains two stamens and one pistil, we very readily ascertain the class and order to be Diandria Monogynia. We then turn to the synoptical table, and find this order subdivided into three parts; and observing that the flowers in our specimen are inferior, one-petalled, and regular, which circumstances correspond only with the first subdivisions containing but one genus, we hence conclude the plant to be a Ligustrum. We likewise discover that the corol is quadrifid, or four-clefted, and that it is succeeded by a berry containing four seeds, which agreeing with the generic description, we cannot doubt but this is the genus to which our plant belongs.

Example II.

PINGUICULA (*Butterwort.*)

Having ascertained, that the plant under consideration should be referred to the same class and order as the preceding, we next proceed to compare it with the three divisions; and observing that the flowers consist of one irregular petal, which is inferior to, or placed beneath the germen, we believe that it belongs to the second. In this section are two subdivisions, viz. *A.* Fruit capsular. *B.* Seeds naked. We therefore examine the fruit, and discovering that the seeds are inclosed in a capsule, conceive that the specimen
in

in question belongs to the former, which includes three genera, *Veronica*, *Pinguicula*, and *Utricularia*.

By comparing the flowers with the essential characters of these three genera we immediately perceive that they agree with *Pinguicula*, as the corol is found to be ringent, and provided with a nectary in the form of a spur, and the calyx is five-cleft: Hence we conclude that we are correct in referring it to the genus *Pinguicula*.

Example III.

MENYANTHES (*Marsh Trefoil*).

We immediately perceive that this plant is to be referred to the class Pentandria, order Monogynia, from each flower having five stamens and one pistil. This order has seven sections. The first of these comprehends all the genera that have inferior flowers, with one petal and four seeds or nuts. The second contains those having one-petalled inferior flowers, and their seeds inclosed in a capsule. The fructification of our specimen agreeing with the second section, we next compare it with the essential characters of the genera, and soon discover that it agrees with *Menyanthes* in having a one-celled capsule, a villous corol, and a bifid stigma. We therefore conclude, that we have ascertained the genus to which the specimen under consideration belongs.

Example IV.

LONICERA (*Honeysuckle*.)

Should a specimen of this beautiful plant occur to us, we soon perceive that it belongs to the class Pentandria, order Monogynia, each flower having five stamens, and the anthers

thers not united, with only one pistil. This order has seven sections. The want of the *four naked seeds*, and the *rough leaves*, induce us to reject the first subdivision. The *flowers* in the second *being inferior*, or *situated beneath the germen*, not corresponding with the specimen under examination, we pass on to the third, where we discover *flowers one-petalled, superior*. This subdivision comprehends four genera, of which the three first have capsules; but in the last the seed-vessel is a berry with two cells: this circumstance, added to the inequality of the corol, and knob at the summit of the pistil, induce us to believe it to be a *Lonicera*; and on comparing the flower with the generic description, we become confirmed in this opinion.

Example V.

CONIUM. (*Hemlock*.)

This is discovered to be an umbellate plant by its inflorescence, and we are induced to refer it to the class and order Pentandria Digynia, by discovering five stamens and two pistils in each flower.

In this order, which contains a great number of genera, there are four sections, and the fourth is thus characterised: *Flowers five-petalled, superior, two-seeded, umbellate*. We may therefore refer the plant to this section, which has the following subdivisions:

- A. Involucres universal and partial.
- B. Involucres partial only.
- C. Involucres none.

By attending to the involucres, we discover that our specimen is provided with both kinds, and consequently belongs to the first subdivision. We next compare it with the essential characters of the genera, and finding it correspond

pond in every circumstance with *Conium*, we hence entertain no hesitation in referring it to that genus*.

Example VI.

PYRUS. (*Pear.*)

From inspecting several flowers of our specimen, and discovering about twenty stamens in each flower; that the calyx is formed of a single concave leaf; that the petals are fixed to the sides of the calyx, and that the stamens are not situated on the receptacle, but inserted in the sides of the calyx or corol; and observing each flower furnished with five pistils, we refer it to the class and order Icosandria Pentagynia. This order contains three genera, in the last of which the calyx is fixed beneath the germen, but in our specimen it is superior; and in other respects it corresponds with the two first genera. The calyx being cleft into five parts, and the corol being composed of five petals, are circumstances common to both: but the fruit of the first is a berry containing five seeds, and the fruit of the second is a pomum, or apple, with five cells and many seeds: hence it appears that our plant is undoubtedly the *Pyrus*; and turning to the generic description, we are confirmed in this opinion.

* It may be here proper to remark, that the umbellate plants all belong to the same class and order; that the seeds ought to be particularly attended to in them, as affording better distinctive marks than the flowers; and that in some of the specimens of the genera referred to the first subdivision, the universal involucre are frequently altogether wanting, or fall off very early: hence it is proper to investigate several umbels before their flowers are expanded.

IV. OF THE SPECIES.

Generic differences have already been shown to depend on the form of the fructification, and are confined to that alone. Specific differences take their rise from any circumstances wherein plants of the same genus are found to disagree; provided such circumstance is constant, and not liable to alteration by culture or other accidents: hence the species are as numerous as the different forms of vegetables now existing.

In some genera we have only one or two species; in most there are several, and in some they are extremely numerous, fifty, a hundred, or even more.

A species is completely denominated, when to the generic, or family name, is added another, which we commonly call indiscriminately the *specific* or *trivial* name, although Linnæus makes a distinction between them. A legitimate specific name, according to him, distinguishes a plant from all others of the same kind, as it contains the essential mark or specific character. A trivial name consists for the most part of only one word, and may be taken without reserve, from circumstances that are wholly inadmissible in the specific name. The trivial names were first introduced by Linnæus in the *Pan Suecus*, and afterwards employed in the *Species Plantarum*. From their shortness, and not being subject to be changed on the discovery of any new species, they are extremely convenient: those are the best which exhibit an abridgement of the specific name or character.

The Species, like the Genera, have two kinds of characters, the *essential* and *natural*.

The

The *Essential*, or *Specific* character, consists of as many characteristic marks as are sufficient to distinguish one species from every other referred to the same genus.

The *Natural* character, or the *description* of the species, commences with the root, and gives successively all the constant and invariable marks of the different parts of the plant. It is not unfrequently subjoined to the specific character.

The specific characters are either derived from some invariable circumstance of the parts of fructification not noticed in the generic character, wherein the species of the same genus disagree; or from the figure, &c. of the *root*, *trunk*, *leaves*, *fulcres*, *hybernacles*, and *inflorescence*.

As the root furnishes an indispensable part of the specific character of several herbaceous plants, in collecting specimens for examination, it is necessary to take them up by the roots: Where these are not wanted, the root-leaves are often necessary, and the undermost leaves of the stem ought always to be taken, since being most invariable, they are on this account preferred in constructing specific characters, unless the contrary be mentioned.

Whenever a genus is subdivided, the particular subdivision to which the plant belongs, should be determined before we proceed to compare it with the specific characters.

A few examples are here subjoined, in order to illustrate the method of investigating the species; but as a detail of the specific characters is necessarily inadmissible with the limits of the present work, we must refer those who wish to enter farther into this subject, to the *Species Plantarum* of Linnæus, Broughton's *Enchiridion Botanicum*, or the *British Flora* of Dr. Hull.

*Example I.*PINGUICULA. (*Common Butterwort.*)

Having ascertained that the plant under examination belongs to the genus *Pinguicula*, we compare it with the two species comprehended under that genus, which are

Lusitanica. P. Nectary blunt, shorter than the petal: stalk hairy: capsule globular. (Nectary thickest at the end. Linn.)

Vulgaris P. Nectary cylindrical, as long as the petal. (Capsule ovate. E. B.)

We very soon discover that it corresponds with the last species, viz. *Pinguicula vulgaris*.

This plant affords an example of a specific character, derived from the parts of fructification.

*Example II.*BRIZA MEDIA (*Quaking Grass.*)

Having ascertained the genus of our plant to be *Briza*, in the manner already directed, we next compare it with the three species comprehended under that genus; and observing that it perfectly agrees with the second of these, we immediately pronounce it to be the *Briza Media**.

* Except the following, all the British Grasses are referred to Triandria Digynia.

Anthoxanthum odoratum (Sweet-scented Vernal Grass) belongs to Diandria Digynia; and *Holcus lanatus* and *mollis* (Meadow and Creeping Soft Grass) to Polygamia Minoecia.

When the flowers of the grasses are examined, before the anthers shed their pollen, the glumes are opened, and the stamens and pistils are perfectly evident, so that the class and order can be determined without the smallest difficulty, more particularly if a glass be employed.

Example

*Example III.*VERONICA OFFICINALIS (*Common Speedwell.*)

Having determined the class, order, and genus to which our specimen belongs, we next discover that *Veronica* has seventeen species arranged under three subdivisions, founded on the inflorescence, viz.

1. Flowers in Spikes.
2. Flowers in a bunch, like *Corymbus*.
3. Peduncles with one flower.

We readily perceive, that the flowers of our plant are spiked, and compare it with the characters of the three species contained in the first division. It disagrees with the two former in wanting terminal spikes, an ascending stem, &c. but perfectly agrees with the third species, in having lateral spikes, opposite leaves, and a trailing stem: hence we are led to refer it to the species *Veronica Officinalis*.

V. OF THE VARIETIES.

The arrangement of varieties under their proper species, is no less necessary than disposing the several species under their proper genera.

The influence of *soil, climate, heat, cold, culture, diseases*, and other accidental causes, tend to produce a change in every part of a plant; and these changes are termed *varieties*.

The *leaves* and *corol* are the parts of a plant most liable to variation.

The leaves vary in their colour, magnitude, pubescence, &c.

The corol is still more subject to vary in colour than the leaves. Sometimes it is altogether wanting, whilst at others it is much larger, or consists of a greater number of petals than is natural.

When the petals are increased in number, and the stamens present, the flower is said to be *double*, or *multiplied* in proportion to the series of the petals. When the number of petals is so much increased as to exclude the stamens, the flower is said to be full; and unless we were previously acquainted with it in its natural state, we should not be able to determine to what genus or species the plant ought to be referred.

In the investigation of the double flowers, the same difficulty does not occur, since the number of petals can be determined from the external series, which is constantly uniform.

Since these variations are not essential, or permanent, it would be incorrect to consider them as distinct species; for although a few of them retain their peculiarities after being transplanted, or propagated by cuttings, yet the young plants which are raised from their seeds, uniformly return to their original state.

After ascertaining the species, we must next proceed to determine the variety to which our plant should be referred.

Example I.

POLYGONUM AVICULARE (*Knot-grass.*)

Having determined, in the manner already mentioned, that the specimen under examination belongs to the Species Polygonum Aviculare, which we observe includes four or five varieties.

Var.

- Var.* 1. *Latifolium*. Broad leaved.
2. *Brevifolium*. Leaves oblong; stamens seven.
3. *Angustifolium*. Leaves strap-shaped.
4. Leaves oval.
5. *Huds. Maritimum*. Stamens eight; styles three; flowers axillary; leaves oval, egg-shaped, evergreen; stem somewhat shrub like*.

We next compare our specimens with these characters, and determine with the greatest facility to which of them it belongs.

* This which is made a variety of the *Polygonum Aviculare* by Hudson, is so nearly allied to that species as scarcely to be distinguished from it.



CHAPTER III.

The Genera of British Plants.

Class I. MONANDRIA.

Monogynia.

Salicornia. *Calyx* one-leaved. *Corol* none. *Seed* single.

Hippuris. *Calyx* none. *Corol* none. *Seed* single.

Digynia.

Callitriche. *Calyx* none. *Corol* two-petalled. *Capsule* bilocular. *Seeds* four.

Class II. DIANDRIA.

Monogynia.

1. Flowers inferior, one-petalled, regular.

Ligustrum. *Calyx* one-leaved. *Corol* four-cleft. *Berry* four-seeded.

2. Flowers inferior, one-petalled, irregular.

A. Fruit capsular.

Veronica. *Corol*, border four-parted, lowest segment narrowest.

Pinguicula. *Corol* ringent, spurred. *Calyx* five-cleft.

Utricularia. *Corol* ringent, spurred. *Calyx* two-leaved.

B. Seeds naked.

Verbena. *Corol* nearly equal. *Calyx* highest segment shorter.

Lycopus.

Lycopus. *Corol* nearly equal. *Stamen* distant.

Salvia. *Corol* ringent. *Filaments* fixed transversely on a pedicel.

3. *Flowers superior.*

Circæa. *Calyx* two-leaved. *Corol* two-petalled. *Petals* inversely heart-shaped.

Digynia.

Anthoxanthum. *Calyx* glume one-flowered, oblong. *Corol* glume awned.

Class III. TRIANDRIA.

Monogynia.

1. *Flowers superior.*

Valeriana. *Corol* five-cleft, gibbous at the base. *Seed* one.

Crocus. *Corol* six-petalled, erecto-patulous. *Stigmas* convolute, coloured.

Iris. *Corol* six-petalled, the alternate petals spreading. *Stigma* petaloid.

Ixia. *Corol* one petalled, tubular; tube straight, filiform, limbus six-parted, equal. *Stigmas* three simple.

2. *Flowers grass-like, calyces glumose, with valves.*

Schœnus. *Corol* none. *Calyx*, chaffy scales fascicled. *Seed* roundish.

Cyperus. *Corol* none. *Calyx* chaffy scales, two rowed. *Seed* naked.

Scirpus. *Corol* none. *Calyx*, chaffy scales, imbricated. *Seed* naked.

Eriophorum.

Eriophorum. *Corol* none. *Calyx* chaffy, scales imbricated. *Seed* wool-bearing.

Nardus. *Corol* two-valved, *Calyx* none. *Seed* covered,

Digynia.

GRASSES.

1. *Flowers scattered, one in each calyx.*

Panicum. *Calyx* trivalved, one valve less and behind the other.

Phalaris. *Calyx* two-valved, valves keeled, equal including the *Corol*.

Alopecurus. *Calyx* two-valved. *Corol* one-valved, undivided at the end. *Nectary* none.

Phlium. *Calyx* two-valved, truncated, mucronate, sessile.

Milium. *Calyx* two-valved, valves ventricose, rather unequal, larger than the *corol*.

Calamagrostis. *Calyx* two-valved, nearly equal, *Corol* hairy at the base.

Agrostis. *Calyx* two-valved, valves acute, shorter than the *Corol* (in all the English species longer).

Dactylis. *Calyx* two-valved, valves concave, keeled,

Stipa. *Calyx* two-valved. *Corol* two-valved, outer valve terminating in an extremely long awn, jointed at its base.

Lagurus. *Calyx* two-valved, villous. *Corol* with two awns terminating, and another fixed to the back.

2. *Flowers scattered, two in each calyx.*

Aira. *Calyx* two-valved. *Florets* without the rudiment of a third.

Melica.

Melica. *Calyx* two-valved, with the rudiment of a third.
Nectary one-leaved, fleshy.

Sesleria. *Involucre* two-leaved. *Calyx* two-valved, with
 one to three florets. *Corol* toothed at the end,

3. *Flowers scattered, several in each calyx.*

Briza. *Calyx* two-valved. *Corol* cordate, valves ventri-
 cose.

Poa. *Calyx* two-valved. *Corol* ovate, valves rather acute.

Festuca. *Calyx* two-valved, *Corol* oblong, valves mu-
 cronate.

Bromus. *Calyx* two-valved. *Corol* oblong, outer valve
 awned below the point.

Avena. *Calyx* two-valved. *Corol* oblong, valves with a
 jointed awn upon the back.

Arundo. *Calyx* two-valved. *Corol* awnless, woolly at
 the base.

4. *Flowers spiked, on a subulate receptacle.*

Triticum. *Calyx* many-flowered.

Hordeum. *Involucres* six-leaved, three-flowered.
Flowers simple.

Class IV. TETRANDRIA.

MONOGYNIA.

1. *Flowers one-petalled, one-seeded, superior.*

AGGREGATE.

Dipsacus. *Calyx* common, leafy. *Receptacle* conical,
 chaffy. *Seeds* columnar.

Scabiosa. *Calyx* common, many-leaved. *Receptacle*
 convex, somewhat chaffy. *Seeds* crowned, in-
 volute.

2 Flowers.

2. *Flowers one-petalled, one-fruited, inferior.*

Plantago. Corol refracted. Calyx four-parted. Capsule two-celled, cut round.

Centunculus. Corol rotate. Calyx four-parted. Capsule one-celled, cut round.

Exacum. Corol rather campanulate. Calyx four-leaved. Capsule two-celled, compressed.

3. *Flowers one-petalled, one-fruited, superior.*

Sanguisorba. Corol flat. Calyx two-leaved. Capsule four-cornered, between the corol and calyx.

4. *Flowers one-petalled, two-berried, superior.*

STELLATE.

Rubia. Corol campanulate. Fruit berried.

Galium. Corol flat. Fruit nearly globular,

Asperula. Corol tubular. Fruit nearly globular.

Sherardia. Corol tubular. Fruit crowned. Seeds three-toothed.

5. *Flowers four-petalled, inferior.*

Epimedium. Petals four nectariferous, reclining, Calyx four-leaved. Silique one-celled.

6. *Flowers four-petalled, superior.*

Cornus. Calyx four-toothed, deciduous. Drupe a two-celled nucleus.

7. *Flowers incomplete, inferior.*

Alchemilla. Calyx eight-cleft. Seed one, inclosed in the calyx.

DIGYNIA.

- Aphanes. *Corol* none. *Calyx* eight-cleft. *Seeds* two.
 Cuscuta. *Corol* four-cleft, ovate. *Calyx* four-cleft. *Capsule* two-celled, cut round.
 Bufonia. *Corol* four-petalled. *Calyx* four-leaved. *Capsule* one-celled, two-valved, two-seeded.

TETRAGYNIA.

- Ilex. *Corol* one-petalled. *Calyx* four-toothed. *Berry* four-seeded.
 Sagina. *Corol* four-petalled. *Calyx* four-leaved. *Capsule* four-celled, many-seeded.
 Potamogeton. *Corol* none. *Calyx* four-leaved. *Seeds* four sessile.
 Ruppia. *Corol* none. *Calyx* none. *Seeds* four, pedicelled.
 Tillæa. *Corol* three or four-petalled. *Calyx* three or four-leaved. *Capsule*, three or four, many-seeded.

Class V. PENTANDRIA.

MONOGYNIA.

1. *Flowers one-petalled, inferior, four-seeded.*

ROUGH LEAVED.

- Anchusa. *Corol* throat arched, funnel-shaped; tube prism-shaped at the base.
 Asperugo. *Corol* throat arched, funnel-shaped. *Fruit* compressed.
 Borago. *Corol* throat toothed, rotate.
 Cynaglossum. *Corol* throat arched, funnel-shaped. *Seeds* depressed, fixed laterally.
 Echium. *Corol* throat naked, irregular, campanulate.
 Lithospermum.

Lithospermum. *Corol* naked, funnel-shaped. *Calyx* five parted.

Lycopsis. *Corol* throat arched, funnel-shaped, tube curved.

Myosotis. *Corol* throat arched, hypocrateriform, lobes emarginate.

Pulmonaria. *Corol* throat naked, funnel-shaped. *Calyx* prismatic.

Symphytum. *Corol* throat toothed, ventricose.

2. *Flowers one-petalled, inferior*. — *Seeds in a vessel*.

Anagallis. *Capsule* one-celled, cut round. *Corol* rotate. *Stigma* capitate.

Lysimachia. *Capsule* one-celled, ten-valved. *Corol* rotate. *Stigma* obtuse.

Cyclamen. *Capsule* one-celled, pulpy within. *Corol* reflected. *Stigma* acute.

Primula. *Capsule* one-celled. *Corol* funnel-shaped, throat pervious. *Stigma* globular.

Hottonia. *Capsule* one-celled. *Corol* tube below the stamens. *Stigma* globular.

Menyanthes. *Capsule* one-celled. *Corol* villous. *Stigma* bifid.

Convolvulus. *Capsule* two-celled, two seeded. *Corol* campanulate. *Stigma* bifid.

Datura. *Capsule* two-celled, four-valved. *Corol* funnel-shaped. *Calyx* deciduous.

Hyoscyamus. *Capsule* two-celled, covered with a lid. *Corol* funnel-shaped. *Stigma* capitate.

Verbascum. *Capsule* two-celled. *Corol* rotate. *Stigma* obtuse. *Stamens* declining.

Chironia. *Capsule* two-celled. *Corol*, tube ucceolate. *Anthems*, after shedding the pollen, spiral.

Polemonium.

Polemonium. *Capsule* three-celled. *Corol* five-parted.
Stamens standing on the valves.

Azalea. *Capsule* five-celled. *Corol* campanulate. *Stigma*
 obtuse.

Vinca. *Follicles* two, erect. *Corol* hypocrateriform.
Seeds twisted.

Solanum. *Berry* two-celled. *Anthers* twice perforated.

Atropa. *Berry* two-celled. *Stamens* distant, incurved.

3. *Flowers one-petalled, superior.*

Campanula. *Capsule* three or five celled, perforated. *Co-*
rol campanulate. *Stigma* three-cleft.

Samolus. *Capsule* one-celled, five-valved at the top. *Co-*
rol hypocrateriform. *Stigma* capitate.

Phyteuma. *Capsule* two or three-celled, perforated. *Co-*
rol five-parted. *Stigma* two or three-cleft.

Lonicera. *Berry* two-celled, roundish. *Corol* irregular.
Stigma capitate.

4. *Flowers five-petalled, inferior.*

Euonymus. *Berry* capsular, lobed. *Calyx* spreading.
Seeds in a berry-like aril.

Rhamnus. *Berry* three-celled, round. *Calyx* tubular,
 bearing the corol. *Scales* five at the mouth,
 converging.

5. *Flowers five-petalled, superior.*

Ribes. *Berry* many seeded. *Calyx* corol-bearing. *Style*
 bifid.

Hedera. *Berry* five-seeded. *Calyx* clasping the fruit.
Stigma simple.

6. *Flowers incomplete, inferior.*

Illecebrum. *Capsule* one-seeded, five-valved. *Calyx* simple, inelegant.

Glaux. *Capsule* five seeded, five valved. *Calyx* rather inelegant, campanulate.

7. *Flowers incomplete, superior.*

Thesium. *Seed* one, crowned. *Calyx* staminiferous.

DIGYNIA.

1. *Flowers one-petalled, inferior.*

Swertia. *Capsule* one-celled, two-valved. *Corol* rotate, with five nectariferous pores.

Gentiana. *Capsule* one-celled, two-valved. *Corol* tubular, indeterminate. *Receptacles* of the seeds, two.

2. *Flowers incomplete.*

Chenopodium. *Seed* one, orbicular. *Calyx* five-leaved, leaflets concave.

Herniaria. *Seed* one, ovate, covered. *Calyx* five-parted. *Filaments* five, barren,

Beta. *Seed* one, reniform. *Calyx* five-leaved, containing the seed in its base.

Salsola. *Seed* one, cochleate, covered. *Calyx* five-leaved.

Ulmus. *Berry* juiceless, compressed. *Calyx* one-leaved, wrinkled.

3. *Flowers five-petalled, superior, two-seeded.*

UMBELLATE.

A. *Involucres universal and partial.*

Hydrocotyle. *Flowers* somewhat umbellate, fertile. *Seeds* compressed.

Sanicula.

- Sanicula.* Flowers somewhat umbellate; central ones abortive. Seeds muricated.
- Eryngium.* Flowers capitate. Receptacle chaffy.
- Heracleum.* Flowers radiate; some abortive. Involucre deciduous. Seeds membranous.
- Oenanthe.* Flowers radiate; outer ones abortive. Involucre simple. Seeds crowned, sessile.
- Echinophora.* Flowers radiate; some abortive. Involucre simple. Seeds sessile.
- Caucalis.* Flowers radiate; central ones abortive. Involucre simple. Seeds muricated.
- Daucus.* Flowers radiate; central ones abortive. Involucre pinnate. Seeds hispid.
- Tordylium.* Flowers radiate; all fertile. Involucre simple. Seeds crenate at the margin.
- Peucedanum.* Flowers flosculous; central ones abortive. Involucre simple. Seeds depressed, striated.
- Conium.* Flowers flosculous; all fertile. Petals cordate. Seeds gibbous, ribbed and furrowed. Involucres halved.
- Bunium.* Flowers flosculous; all fertile. Petals cordate. Involucres setaceous.
- Athamanta.* Flowers flosculous; all fertile. Petals cordate. Seeds convex, striated.
- Bupleurum.* Flowers flosculous; all fertile. Petals involute. Involucres petaliform.
- Sium.* Flowers flosculous; all fertile. Petals cordate. Seeds nearly ovate, striated.
- Selinum.* Flowers flosculous; all fertile. Petals cordate. Seeds depressed, striated.
- Crithmum.* Flowers flosculous; all fertile. Petals flat-tish. Involucre horizontal.

Ligusticum. *Flowers* flosculous; all fertile. *Petals* involute. *Involucres* membranous.

Angelica. *Flowers* flosculous; all fertile. *Petals* flattish. *Umbellets* globular.

Sison. *Flowers* flosculous; all fertile. *Petals* flattish. *Umbel* of few rays.

B. *Involucres* partial, universal, none.

Scandix. *Flowers* radiate; central ones abortive. *Fruit* oblong.

Coriandrum. *Flowers* radiate; central ones abortive. *Fruit* nearly globular.

Æthusa. *Flowers* somewhat radiate; all fertile. *Involucres* halved.

Chærophylum. *Flowers* flosculous; central ones abortive. *Involucres* five-leaved.

Phellandrium. *Flowers* flosculous; all fertile. *Fruit* crowned.

Imperatoria. *Flowers* flosculous; all fertile. *Umbel* spreading, flat.

Cicuta. *Flowers* flosculous; all fertile. *Petals* flattish.

C. *Involucres* none; neither universal, nor partial.

Smyrnium. *Flowers* flosculous: central ones abortive. *Seeds* reniform, angular.

Carum. *Flowers* flosculous; central ones abortive. *Seeds* gibbous, striated.

Pastinaca. *Flowers* flosculous; all fertile. *Seeds* depressed, flat.

Anethum. *Flowers* flosculous; all fertile. *Seeds* margined, striated.

Ægopodium.

Ægopodium. Flowers flosculous; all fertile. Seeds gibbous, striated. Petals cordate.

Apium. Flowers flosculous; almost all fertile. Seeds minute, striated. Petals inflected.

Pimpinella. Flowers flosculous; all fertile. Umbels nodding before flowering. Petals cordate.

TRIGYNIA.

1. *Flowers superior.*

Viburnum. Corol five-cleft. Berry one-seeded.

Sambucus. Corol five-cleft. Berry three-seeded.

2. *Flowers inferior.*

Corrigiola. Corol five-petalled. Seed one, three-cornered. Calyx five-parted.

Staphylia. Corol five-petalled. Capsule two or three cleft, inflated.

Tamarix. Corol five-petalled. Capsule one-celled. Seeds downy.

Alsine. Corol five-petalled. Capsule one-celled. Calyx five-leaved. Petals bifid.

TETRAGYNIA.

Parnassia. Corol five-petalled. Capsule four-valved. Nectaries five, ciliato-glandular.

PENTAGYNIA.

Linum. Corol five-petalled. Capsule ten-celled, two-seeded.

Drosera. Corol five-petalled. Capsule one-celled, opening at the top.

Sibbaldia. Corol five-petalled. Seeds five. Calyx ten-cleft.

Statice. Corol five-parted. Seed one, clothed with a funnel-shaped calyx.

POLYGYNIA.

Myosurus. Calyx five-leaved. Nectaries five, linguiform. Seeds numerous.

Class VI. HEXANDRIA.

MONOGYNIA.

1. Flowers furnished with calyx and corol.

Frankenia. Corol five-petalled. Calyx one-leaved, inferior. Capsule one-celled, many-seeded.

Berberis. Corol six-petalled. Calyx six-leaved, inferior. Berry two-seeded.

2. Flowers with a spathe or glume.

Leucojum. Corol superior, six-petalled, campanulate. Stamens equal.

Galanthus. Corol superior, six-petalled; three inner petals shorter, emarginate.

Narcissus. Corol superior, six-petalled. Nectary campanulate, on the outside of the stamens.

Allium. Corol inferior, six-petalled. Petals ovate, sessile.

3. Flowers naked (without calyx).

Convallaria. Corol inferior, six-cleft. Berry three-seeded.

Hyacinthus. Corol inferior, six-cleft. Germen with three melliferous pores at the top.

Anthericum

- Anthericum.** *Corol* inferior, six-petalled, flat.
Narthecium. *Corol* inferior, six-petalled. *Style* none.
Seeds with a tail at each end.
Ornithogallum. *Corol* inferior, six-petalled. *Filaments*
alternately broader at the base.
Scilla. *Corol* inferior, six-petalled, deciduous. *Filaments*
filiform.
Asparagus. *Corol* inferior, six-petalled. *Berry* six-
seeded.
Fritillaria. *Corol* inferior, six-petalled, with a nectarifer-
ous hollow at the base, ovate.
Tulipa. *Corol* inferior, six-petalled, campanulate. *Style*
none.

4. *Flowers incomplete* (without petals).

- Acorus.** *Spadix* many-flowered. *Capsule* three-celled.
Juncus. *Calyx* six-leaved. *Capsule* one-celled.
Peplis. *Calyx* twelve-cleft. *Capsule* two-celled.

TRIGYNIA.

Flowers inferior.

- Colchicum.** *Calyx* a spathe. *Corol* six-petaloid.
Triglochin. *Calyx* three-leaved. *Corol* three-petalled.
Capsule opening at the base.
Rumex. *Calyx* three-leaved. *Corol* three-petalled. *Seed*
one, three cornered.
Tofieldia. *Calyx* none. *Corol* six-petalled. *Capsule*
three-celled, six-valved.

POLYGYNIA.

- Alisma.** *Calyx* three-leaved. *Corol* three-petalled. *Pe-
ricarps* several.

Class VII. HEPTANDRIA.

MONOGYNIA.

Trientalis. *Calyx* seven-leaved. *Corol* seven-parted, flat.
Berry one-celled, dry.

Class VIII. OCTANDRIA.

MONOGYNIA.

1. *Flowers complete.*

Epilobium. *Corol* four-petalled. *Calyx* four-leaved, superior. *Capsule* four-celled. *Seeds* pappous.

Chlora. *Corol* eight-cleft. *Calyx* eight-leaved, inferior.
Capsule one-celled, two-valved, many seeded.

Vaccinium. *Corol* one-petalled. *Calyx* four-toothed, superior. *Filaments* inserted in the receptacle.
(Anthers awned in the middle.) a *Berry*

Erica. *Corol* one-petalled. *Calyx* four-leaved, inferior.
Filaments inserted in the receptacle. A *Capsule*.

2. *Flowers incomplete.*

Daphne. *Calyx* four-cleft, corol like, equal. *Stamens* inclosed. *Berry* pulpy.

TRIGYNIA.

Polygonum. *Corol* none. *Calyx* five-parted. *Seed* one, naked.

TETRAGYNIA.

Adoxa. *Corol* four or five-cleft, superior. *Calyx* two-leaved. *Berry* four or five-seeded.

Elatine.

Elatine. *Corol* four-petalled, *Calyx* four-leaved. *Capsule* four-celled.

Paris. *Corol* four-petalled, subulate. *Calyx* four-leaved. *Berry* four-celled.

Class IX. ENNEANDRIA.

HEXAGYNIA.

Butomus. *Calyx* none. (*Involucre* simple, three-leaved). *Corol* six-petalled. *Capsules* six. *Seeds* many.

Class X. DECANDRIA.

MONOGYNIA.

1. *Flowers many-petalled, equal.*

Monotropa. *Calyx* corol like, gibbous at the base. *Capsule* five-celled, many-seeded.

Pyrola. *Anthers* two horned upwards. *Capsule* five-celled, many-seeded.

2. *Flowers one-petalled, equal.*

Andromeda. *Corol* campanulate, round. *Capsule* five-celled.

Arbutus. *Corol* ovate, diaphanous at the base. *Berry* five-celled.

DIGYNIA.

Scleranthus. *Corol* none. *Calyx* five-cleft, superior. *Seeds* two.

Chrysosplenium. *Corol* none. *Calyx* superior. *Capsule* one-celled, two-beaked.

Saxifraga. *Corol* five-petalled. *Calyx* five-parted. *Capsule* one-celled, two-beaked.

- Saponaria. *Corol* five-petalled. *Calyx* tubular, naked at the base. *Capsule* one-celled, oblong.
- Dianthus. *Corol* five-petalled. *Calyx* tubular, scaly at the base. *Capsule* one-celled, oblong.

TRIGYNIA.

- Arenaria. *Capsule* one-celled. *Petals* entire, spreading.
- Stellaria. *Capsule* one-celled. *Petals* two-parted, spreading.
- Cucubalus. *Capsule* three-celled. *Petals* two-cleft, throat naked.
- Cherleria. *Capsule* three-celled. *Nectaries* petal like, smaller than the calyx.
- Silene. *Capsule* three-celled. *Petals* two-cleft, throat crowned.

PENTAGYNIA.

- Agrostemma. *Capsule* one-celled, oblong. *Calyx* tubular, coriaceous.
- Cerastium. *Capsule* one-celled. *Petals* bifid. *Calyx* five-leaved.
- Cotyledon. *Capsules* five, adjoining the nectaries. *Corol* one-petalled.
- Lychnis. *Capsule* three-celled, oblong. *Calyx* tubular, membranous.
- Oxalis. *Capsule* one, three, or five-celled, angular. *Corol*, petals connected at the base.
- Spergula. *Capsule* one-celled. *Petals* entire. *Calyx* five-leaved.
- Sedum. *Capsule* five, annexed to the nectaries. *Corol* five-petalled.

Class

Class XI. DODECANDRIA.

MONOGYNIA.

Asarum. *Corol* none. *Calyx* three-cleft, superior. *Capsule* six-celled.

Lythrum. *Corol* six-petalled. *Calyx* twelve-cleft, inferior. *Capsule* (one, or) two-celled.

DIGYNIA.

Agrimonia. *Corol* five-petalled. *Calyx* five-cleft. *Seeds* one or two.

TRIGYNIA.

Réseda. *Corol*, petals many-cleft. *Calyx* parted. *Capsule* one-celled, gaping.

Euphorbia. *Corol*, petals peltate. *Calyx* ventricose. *Capsule* three-grained.

DODECAGYNIA.

Sempervivum. *Corol* twelve-petalled. *Calyx* twelve-parted. *Capsules* twelve.

Class XII. ICOSANDRIA.

MONOGYNIA.

Prunus. *Calyx* inferior, five-cleft. *Corol* five-petalled. *Drupe* with an entire nucleus.

DIGYNIA.

Cratægus. *Calyx* superior, five-cleft. *Corol* five-petalled. *Berry* two-seeded.

TRI-

TRIGYNIA.

- Sorbus. *Calyx* superior, five-cleft. *Corol* five-petalled.
Berry three-seeded.

PENTAGYNIA.

- Mespilus. *Calyx* superior, five-cleft. *Corol* five-petalled.
Berry five-seeded.
- Pyrus. *Calyx* superior, five-cleft. *Corol* five-petalled.
Pome five-celled, many-seeded.
- Spiræa. *Calyx* inferior, five-cleft. *Corol* five-petalled.
Capsules many, heaped together.

POLYGYNIA.

- Rosa. *Calyx* five-cleft. *Corol* five-petalled. *Calyx* ber-
ried, many-seeded.
- Rubus. *Calyx* five-cleft. *Corol* five-petalled. *Berry*
compound.
- Tormentilla. *Calyx* eight-cleft. *Corol* four-petalled.
Seeds eight, awnless.
- Dryas. *Calyx* five to ten-cleft. *Corol* five to eight-pe-
talled. *Seeds* numerous, with a woolly awn.
- Fragaria. *Calyx* ten-cleft. *Corol* five-petalled. *Seeds*
numerous, upon a berried receptacle, deciduous.
- Potentilla. *Calyx* ten-cleft. *Corol* five-petalled. *Seeds*
numerous, awnless.
- Geum. *Calyx* ten-cleft. *Corol* five-petalled. *Seeds* nu-
merous, with a geniculate awn.
- Comarum. *Calyx* ten-cleft. *Corol* five-petalled. *Seeds*
numerous, upon a fleshy receptacle, permanent.

Class

Class XIII. POLYANDRIA.

MONOGYNIA.

1. *Flowers four-petalled.*

Actea. *Calyx* four-leaved. *Berry* one-celled. *Seeds* in a double row.

Chelidonium. *Calyx* two-leaved. A *Silique*,

Papaver. *Calyx* two-leaved. *Capsule* one-celled, crowned.

2. *Flowers five-petalled.*

Tilia. *Capsule* five-celled, coriaceous, one-seeded. *Calyx* deciduous.

Cistus. *Capsule* roundish. *Calyx* five-leaved, two leaflets smaller.

3. *Flowers many-petalled.*

Nymphæa. *Berry* many-celled, with a bark-like coat. *Calyx* large.

TRIGYNIA.

Delphinium. *Calyx* none. *Corol* five-petalled, uppermost horn-shaped. *Nectary* bifid, sessile.

PENTAGYNIA.

Aquilegia. *Calyx* none. *Corol* five-petalled. *Nectaries* five, horn-shaped below.

HEXAGYNIA.

Stratiotis. *Calyx* three-parted. *Corol* three-petalled. *Berry* six-celled, within a spathe.

POLY-

POLYGYNIA.

- Helleborus. *Calyx* none. *Corol* five-petalled, persisting. *Nectaries* numerous. *Capsules* many-seeded.
- Ranunculus. *Calyx* five-leaved. *Corol* five-petalled. *Seeds* numerous. *Petals* with a nectariferous claw.
- Anemone. *Calyx* none. *Corol* six-petalled. *Seeds* numerous.
- Adonis. *Calyx* five-leaved. *Corol* five, or ten-petalled. *Seeds* many, angular, with a bark like coat.
- Clematis. *Calyx* none. *Corol* four-petalled. *Seeds* numerous, awned.
- Caltha. *Calyx* none. *Corol* five-petalled. *Capsules* many. *Nectaries* none.
- Thalictrum. *Calyx* none. *Corol* four or five-petalled. *Seeds* numerous, somewhat awned, naked.
- Trollius. *Calyx* none. *Corol* fourteen-petalled. *Nectaries* linear. *Capsules* many-seeded.

Class XIV. DIDYNAMIA.

GYMNOSPERMIA.

1. *Calyxes* mostly five-cleft.

- Marrubium. *Calyx* ten-striated. *Corol* upper lip straight.
- Ballota. *Calyx* ten-striated. *Corol* upper lip arched.
- Teucrium. *Corol* upper lip none, but (the upper side of the tube) two-parted.
- Ajuga. *Corol* upper lip shorter than the stamens.
- Galeobdolon. *Corol* upper lip entire, arched; lower lip three-cleft; segments broad, acute. *Anthers* fleshy on the back.

Betonica.

- Betonica.* *Corol* upper lip flat, ascending. *Tube* cylindrical. *Stamens* as long as the mouth of the tube.
- Lamium.* *Corol*, lower lip with a setaceous tooth on each side.
- Galeopsis.* *Corol*, lower lip with two teeth above.
- Stachys.* *Corol*, lower lip reflected at the sides. *Stamens* turned to the sides, when deflorate.
- Nepeta.* *Corol*, lower lip crenate. *Throat* with the margin reflected.
- Leonurus.* *Anthers* sprinkled with shining dots.
- Glechoma.* *Anthers* in pairs, each pair forming a cross.
- Mentha.* *Filaments* distant, straight. *Corol* nearly equal.
2. *Calyxes* two-lipped.
- Scutellaria.* *Calyx* when in fruit covered with a lid.
- Melittis.* *Calyx* larger than the tube of the corol. *Corol* lip flat, entire. *Anthers* crossed.
- Melissa.* *Calyx* angular, skin-like (scariose) upper lip ascending.
- Thymus.* *Calyx* throat (small) closed with soft hairs.
- Origanum.* *Strobile* collecting the calyces. (*Calyxes* forming an imbricated cone.)
- Clinopodium.* *Involucre* collecting the calyces.
- Prunella.* *Filaments* all forked at the end.

ANGIOSPERMIA.

1. *Calyxes* bifid.

- Orobanche.* *Capsule* one-celled. *Corol* nearly equal, four-cleft. *Gland* under the base of the germen.

2. *Calyxes* four-cleft.

- Lathræa.* *Capsule* one-celled. *Corol* personate. *Gland* under the germen.

Bartsia.

- Bartsia.* Capsule two-celled. Corol personate. Calyx coloured (not in our species).
- Euphrasia.* Capsule two-celled. Corol personate. Anthers lower, with thorns on one lobe.
- Rhinanthus.* Capsule two-celled. Corol personate. Capsule compressed.
- Melampyrum.* Capsule two-celled. Corol personate. Seeds two, gibbous.

3. *Calyxes five-cleft.*

- Digitalis.* Capsule two-celled. Corol campanulate, on the under side ventricose. Stamens declining.
- Scrophularia.* Capsule two-celled. Corol re-supinate. Lip with the intermediate segment more inward.
- Antirrhinum.* Capsule two-celled. Corol personate, with a prominent nectary underneath.
- Pedicularis.* Capsule two-celled. Corol personate. Seeds coated.
- Sibthorpia.* Capsule two-celled. Corol rotate. Stamens two and two approximate.
- Limosella.* Capsule one-celled. Corol campanulate, regular. Seeds numerous.
- Linnæa.* Berry three-celled, dry. Corol campanulate. Calyx superior.

Class XV. TETRADYNAMIA.

SILICULOSA.

1. *Silicle entire, not emarginate at the end.*

- Moenchia.* Silicle ovate, crowned with the style; valves rather convex.

Draba.

Draba. *Silicle* valves flattish. *Style* none.

Subularia. *Silicle* valves semi-ovate. *Style* shorter than the *silicle*.

Myagrum. *Silicle* valves concave. *Style* persisting.

Vella. *Silicle* valves one half shorter than the dissepiment.

Bunias. *Silicle* deciduous, roundish, muricated.

Crambe. *Silicle* deciduous, globular, like a dry berry.
Filaments four (longer) forked at the end.

Isatis. *Silicle* deciduous, lanceolate, one-seeded.

2. *Silicle emarginate at the end.*

Cochlearia. *Silicle* cordate, valves obtuse, gibbous.

Lepidium. *Silicle* cordate, valves acutely keeled.

Thlaspi. *Silicle* obcordate, valves (in some species) marginate, keeled.

Iberis. *Petals* two outermost larger.

SILICUOSA.

1. *Calyx* closed, the leaflets converging longitudinally.

Raphanus. *Silique* jointed.

Erysimum. *Silique* four-cornered.

Cheiranthus. *Silique*, the germen with a gland on each side of its base.

Hesperis. *Glands* within the shorter stamens. *Petals* oblique.

Arabis. *Glands* four within the leaflets of the *calyx*.
Stigma simple.

Brassica. *Glands* two within the shorter stamens; two on the outside of the longer stamens.

Turritis. *Petals* erect.

Dentaria. *Silique*, valves revolute, when open.

2. *Calyx*

2. *Calyx* gaping, the leaflets distant above.

- Cardamine. *Siliqua* opening, valves revolute.
 Sinapis. *Siliqua* opening. *Calyx* expanding horizontally.
 Sisymbrium. *Siliqua* opening, valves straightish.

Class XVI. MONADELPHIA.

DECANDRIA.

- Geranium. *Pistil* one. *Capsule* (Fruit) five-grained,
 beaked.

POLYANDRIA.

- Althæa. *Pistils* many. *Calyx* outer nine-cleft. *Arils*
 one-seeded, verticillate.
 Lavatera. *Pistils* many. *Calyx* outer three-cleft. *Arils*
 one-seeded, verticillate.
 Malva. *Pistils* many. *Calyx* outer three-leaved. *Arils*
 one-seeded, verticillate, numerous.

Class XVII. DIADELPHIA.

HEXANDRIA.

- Fumaria. *Calyx* two-leaved. *Corol* ringent, gibbous at
 the base, nectariferous. *Filaments* with three
 anthers.

OCTANDRIA.

- Polygala. *Calyx*, two segments wing like. *Corol*, stand-
 ard cylindrical. *Stamens* connected. *Capsule*
 obcordate, two-celled.

DECANDRIA.

1. *All the stamens connected.*

Spartium. *Filaments* adhering to the germen. *Stigma* hairy, adnate (growing to the upper side of the style. Withering.)

Genista. *Pistil* depressing the keel. *Stigma* involute.

Anthyllus. *Calyx* turgid, including the legume.

Ulex. *Calyx* two-leaved. *Legume* scarcely longer than the calyx.

Ononis. *Legume* rhomboid, sessile. *Standard* striated.

2. *Stigma pubescent.*

(Without the marks of the first division.)

Orobus. *Style* linear, nearly cylindrical, villous above.

Pisum. *Style* keeled and hairy above.

Lathyrus. *Style* flat, and villous above.

Vicia. *Style* bearded under the stigma.

3. *Legumes two-celled.*

(Without the marks of the first and second division.)

Astragalus. *Legume* two-celled, curved.

4. *Legume about one-seeded.*

(Without the marks of the former divisions.)

Trifolium. *Legume* scarcely longer than the calyx, one or two-seeded. *Flowers* (mostly) capitate.

5. *Legume somewhat jointed.*

(Sometimes spiral. Withering.)

Hedysarum. *Legume* with roundish, compressed joints. *Keel* very obtuse.

Ornithopus. *Legume* jointed, bent like a bow.

Hippocrepis. *Legume* compressed, membranous; one suture with deep notches in the middle.

Medicago. *Legume* spiral, membranous, compressed. *Pistil* pressing down the keel.

6. *Legume* one-celled, many-seeded.

(Without the marks of the former divisions.)

Ervum. *Calyx* five-parted, nearly equal, almost as long as the corol.

Lotus. *Legume* cylindrical, stuffed with cylindrical seeds.

Most of the plants composing this class are found to be highly acceptable to almost all cattle. None of them are refused by cows and sheep, and not more than three out of the whole number by horses. They afford the richest food for cattle, and are cultivated in different parts of Europe with every possible attention. In this country, until lately the *Trifolium pratense*, or clover, was mostly sown; but some individuals are now of opinion that the *Hedysarum Onobrychis*, or Saintfoin, answers better than even Clover: Lucern is likewise pretty generally cultivated.

Among these plants the *Anthyllis Vulneraria*, or Kidney Vetch, is particularly palatable to sheep; insomuch that the separate cultivation of it has been recommended. It will only, however, succeed well on chalky grounds.

Class XVIII. POLYADELPHIA.

POLYANDRIA.

Hypericum. *Calyx* five-parted, inferior. *Corol* five-petalled. *Styles* one, three or five. *Capsules*, one, three to five-celled.

Class

Class XIX. SYNGENESIA.

POLYGAMIA ÆQUALIS.

1. *Semifloscular of Tournefort, all the florets ligulate.*

- Tragopogon.** *Receptacle* naked. *Pappus* feathery, stipitate. *Calyx* simple.
- Sonchus.** *Receptacle* naked. *Pappus* hairy, sessile. *Calyx* imbricated, gibbous.
- Lactuca.** *Receptacle* naked. *Pappus* hairy, stipitate. *Calyx* imbricated; scales with a scariose margin.
- Prenanthes.** *Receptacle* naked. *Pappus* hairy. *Calyx* calyceled, about five-flowered.
- Leontodon.** *Receptacle* naked. *Pappus* feathery, stipitate. *Calyx* imbricated with loose (flexible) scales.
- Crepis.** *Receptacle* naked. *Pappus* hairy. *Calyx* calyceled, with scales of different forms.
- Picris.** *Receptacle* naked. *Pappus* feathery, stipitate, *Calyx* calyceled.
- Hieracium.** *Receptacle* naked. *Pappus* hairy, sessile. *Calyx* imbricated, ovate.
- Hyoscris.** *Receptacle* naked. *Pappus* crowned with a calycle. *Calyx* nearly equal.
- Hypochæris.** *Receptacle* chaffy. *Pappus* somewhat feathery. *Calyx* imbricated.
- Lapsana.** *Receptacle* naked. *Pappus* none. *Calyx* calyceled.
- Cichorium.** *Receptacle* somewhat chaffy. *Pappus* about five-toothed. *Calyx* calyceled.

2. *Capitate.*

Carlina. *Calyx* radiate, rays coloured.

Arctium. *Calyx* globular; scales in-curved, and hooked at the point.

Carduus. *Calyx* ventricose, with thorny scales. *Receptacle* hairy.

Onopordum. *Calyx* ventricose, with thorny scales. *Receptacle* honey-combed.

Serratula. *Calyx* nearly cylindrical, imbricated with scales rather acute, but awnless.

3. *Discoid.*

(*Florets all tubular.*)

Eupatorium. *Receptacle* naked. *Pappus* feathery. *Calyx* imbricated. *Pistil* very long.

Santolina. *Receptacle* chaffy. *Pappus* none. *Calyx* imbricated; hemispherical.

Athanasia. *Receptacle* chaffy. *Pappus* chaffy. *Calyx* imbricated.

Bidens. *Receptacle* chaffy. *Pappus* awned. *Calyx* imbricated.

POLYGAMIA SUPERFLUA.

1. *Discoid.*

(*Without ligulate florets.*)

Gnaphalium. *Receptacle* naked. *Pappus* feathery. *Calyx* scariose, with concave scales.

Tanacetum. *Receptacle* naked. *Pappus* with a slight margin. *Corol* of the ray three-cleft.

Artemisia. *Receptacle* nearly naked. *Pappus* none. *Corol* none in the florets of the ray.

Conyza.

Lyza. *Receptacle* naked. *Pappus* hairy. *Corol* of the ray three-cleft.

2. *Radiate.*

Chrysanthemum. *Receptacle* naked. *Pappus* none. *Calyx*, innermost scales scariose.

Matricaria. *Receptacle* naked. *Pappus* none. *Calyx* with imbricated acute scales.

Doronicum. *Receptacle* naked. *Pappus* hairy. *Pappus* of the ray none.

Bellis. *Receptacle* naked. *Pappus* none. *Calyx* simple, with equal scales.

Inula. *Receptacle* naked. *Pappus* hairy. *Anthems* two-bristled at the base.

Senecio. *Receptacle* naked. *Pappus* hairy. *Calyx* with the scales sphacelated (blackish) at the ends.

Anthemis. *Receptacle* chaffy. *Pappus* none. *Calyx* hemispherical.

Achillea. *Receptacle* chaffy. *Pappus* none. *Ray* about five-flowered. *Calyx* oblong.

Erigeron. *Receptacle* naked. *Pappus* hairy. *Corollets* of the ray capillary.

Solidago. *Receptacle* naked. *Pappus* hairy. *Corollets* of the ray about six, remote.

Cineraria. *Receptacle* naked. *Pappus* hairy. *Calyx* equal, simple.

Tussilago. *Receptacle* naked. *Pappus* hairy. *Calyx* with scales somewhat membranous.

Aster. *Receptacle* naked. *Pappus* hairy. *Calyx* somewhat squarrose.

POLYGAMIA FRUSTRANEA.

Centaurea. *Receptacle* bristly. *Pappus* hairy. *Corollets* of the ray tubular.

POLYGAMIA NECESSARIA.

Calendula. *Receptacle* naked. *Pappus* none. *Seeds* membranous.

Filago. *Receptacle* naked. *Pappus* none. *Female florets* among the scales of the calyx.

MONOGAMIA.

Impatiens. *Calyx* two-leaved. *Corol* five-petalled, irregular. *Capsule* superior, five-valved.

Jasione. *Calyx* common (ten leaved). *Corol* five-petalled, regular. *Capsule* inferior, two-celled.

Lobelia. *Calyx* five-toothed. *Corol* one-petalled, irregular. *Capsule* inferior, two-celled.

Viola. *Calyx* two-leaved. *Corol* five-petalled, irregular. *Capsule* superior, three-valved.

Class XX. GYNANDRIA.

DIANDRIA.

Ophrys. *Nectary* somewhat keeled.

Orchis. *Nectary* horn-shaped.

Satyrrium. *Nectary* purse-like, with a depressed line in the middle.

Cypripedium. *Nectary* inflated, ventricose.

Serapias. *Nectary* ovate, gibbous underneath.

Malaxis. *Nectary* erect, one-leaved, cordate, concave, inclosing the stamens and pistil. *Corol* reversed.

HEX-

HEXANDRIA.

Aristolochia. Hexagynous. *Calyx* none. *Corol* one-petalled. *Capsule* six-celled.

POLYANDRIA.

Zostera. A leaf. *Calyx* none. *Corol* none. *Seeds* alternate, naked. (*Stamens* alternate. *Seeds* solitary. Withering.)

Arum. *Spathe* one-leaved. *Calyx* none. *Corol* none. *Stamens* above the *Pistils*.

Class XXI. MONOECIA.

MONANDRIA.

Zannichellia. Male. *Calyx* none. *Corol* none.
Female. *Calyx* one-leaved. *Corol* none.
Pistils four. *Seeds* four.

Chara. Male. *Calyx* none. *Corol* none.
Female. *Calyx* four-leaved. *Corol* none.
Stigma three-cleft. *Seed* one.

DIANDRIA.

Lemna. Male. *Calyx* one-leaved. *Corol* none.
Female. *Calyx* one-leaved. *Corol* none. *Style* one. *Capsule* one-celled.

TRIANDRIA.

Sparganium. Male. (*Ament* nearly globular.) *Calyx* three-leaved. *Corol* none.
Female. (*Ament* nearly globular.) *Calyx* three-leaved. *Corol* none. *Stigmas* (one or) two. *Drupe* juiceless, one-seeded.
Carex.

Carex. Male. *Ament* (oblong. *Calyx* one-leaved) one-flowered. *Corol* none.

Female. *Ament* (oblong. *Calyx* one-leaved) one-flowered. *Corol* one. *Style* one. *Seed* one, coated.

Typha. Male. (*Ament* cylindrical.) *Calyx* three-leaved. *Corol* none.

Female. (*Ament* cylindrical, below the male.) *Calyx* capillary. *Corol* none. *Styles* one. *Seed* one, pappous-bearing.

TETRANDRIA.

Littorella. Male. *Calyx* four-leaved. *Corol* four-cleft. *Stamens* very long.

Female. *Calyx* none. *Corol* (mostly) four-cleft. *Style* very long. *Seed* a nut.

Betula. Male. *Ament* (nearly cylindrical. *Calyx*) three-flowered. *Corol* four-parted.

Female. *Ament* (nearly cylindrical. *Calyx*) two-flowered. *Corol* none. *Style* two. *Seed* one, ovate.

Buxus. Male. *Calyx* three-leaved. *Corol* two-petalled.

Female. *Calyx* four-leaved. *Corol* three-petalled. *Stigmas* three. *Capsule* three-celled.

Urtica. Male. *Calyx* four-leaved. *Corol* none. *Nectary* glass-shaped.

Female. *Calyx* two-valved. *Corol* none. *Stigma* villous. *Seed* one, ovate.

PENTANDRIA.

Amaranthus. Male. *Calyx* proper, five-leaved. *Corol* none. *Stamens* three to five.

Female. *Calyx* proper, five-leaved. *Corol* none. *Styles* three. *Capsule* opening horizontally.

Xanthium. Male. (Flowers compound.) *Calyx* common, many-leaved. *Corol* five-cleft. *Filaments* connected.

Female. (Flowers below the males.) *Calyx* none. *Corol* none. *Styles* two. *Drupe* two-celled.

POLYANDRIA.

(*Stamens more than seven.*)

Ceratophyllum. Male. *Calyx* about seven-parted. *Corol* none. *Stamens* about eighteen.

Female. *Calyx* about seven-parted. *Corol* none. *Pistil* one. *Seed* one.

Myriophyllum. Male. *Calyx* four-leaved. *Corol* none. *Stamens* eight.

Female. *Calyx* four-leaved. *Corol* none. *Pistils* four. *Seeds* four.

Sagittaria. Male. *Calyx* three-leaved. *Corol* three-petalled. *Stamens* about twenty-four.

Female. *Calyx* three-leaved. *Corol* three-petalled. *Seeds* numerous.

Poterium. Male. *Calyx* four-leaved. *Corol* four-parted. *Stamens* about thirty-two.

Female. *Calyx* four-leaved. *Corol* four-petalled. *Pistils* two. *Seeds* two, covered.

Quercus. Male. *Calyx* five-cleft. *Corol* none. *Stamens* about ten.

Female. *Calyx* entire. *Corol* none. *Styles* about five. *Nut* coriaceous.

Fagus. Male. *Calyx* five-cleft. *Corol* none. *Stamens* about twelve.

Female. *Calyx* four-cleft. *Corol* none. *Styles* three. *Capsule* two-seeded.

Carpinus. Male. *Ament* imbricated. *Corol* none. *Stamens* ten.

Female. *Calyx* six-cleft. *Corol* none. *Pistils* two. *Nut* naked.

Corylus. Male. *Ament* imbricated. *Corol* none. *Stamens* eight.

Female. *Calyx* two-leaved. *Corol* none. *Styles* two. *Nut* naked.

MONADELPHIA.

Pinus. Male. *Calyx* four-leaved. *Corol* none. *Stamens* many.

Female. *Ament* strobilaceous. *Corol* none. *Pistils* two. *Nuts* two winged.

SYNGENESIA.

Bryonia. Male. *Calyx* five-toothed. *Corol* five-parted. *Filaments* three.

Female. *Calyx* five-toothed. *Corol* five-parted. *Style* trifid. *A Berry*.

Class XXII. DIOECIA.

DIANDRIA.

Salix. Male. *Ament* (oblong, imbricated). *Scale* (one-flowered). *Corol* none. *Stamens* two, rarely five.

Female. *Ament* scales. *Corol* none. *Stigmas* two. *Capsule* two-valved. *Seeds* downy.

TRIANDRIA.

Empetrum. Male. *Calyx* three-parted. *Corol* three-petalled.

Female. *Calyx* three-parted. *Corol* three-petalled. *Styles* nine. *Berry* nine-seeded.

TETRANDRIA.

Hippophæ. Male. *Calyx* two-parted. *Corol* none.

Female. *Calyx* bifid. *Corol* none. *Pistil* one. *Berry* one-seeded. *Aril* truncated.

Viscum. Male. *Calyx* four-parted. *Corol* none. (*Filaments* none. *Anthers* fixed to the calyx).

Female. *Calyx* four-leaved. *Corol* none. *Stigma* obtuse. *Berry* one-seeded, inferior.

Myrica. Male. *Ament* (ovato-oblong) scale (one-flowered). *Corol* none.

Female. *Ament* scale. *Corol* none. *Styles* two. *Berry* one-seeded.

PENTANDRIA.

Humulus. Male. *Calyx* five-leaved. *Corol* none.

Female. *Calyx* one-leaved (with an oblique opening). *Corol* none. *Styles* two. *Seed* one, winged with the calyx.

HEXANDRIA.

Tamus. Male. *Calyx* six-leaved (six-parted). *Corol* none.

Female. *Calyx* six-leaved. *Corol* none. *Style* three-cleft. *Berry* three-celled, inferior.

OCTANDRIA.

Rhodiola. Male. *Calyx* four-parted. *Corol* four-petalled.

Female. *Calyx* four-parted. *Corol* none.

Pistils four. *Capsules* four, many-seeded.

Populus. Male. *Ament* (oblong, imbricated; scales one-flowered) lacerated. *Corol* none. *Nectary* ovate. *Stamens* eight to sixteen.

Female. *Ament* lacerated. *Corol* none. *Stigma* four-cleft. *Capsule* two-valved. *Seeds* pappous.

ENNEANDRIA.

Hydrocharis. Male. *Calyx* three-leaved (three-cleft).

Corol three-petalled.

Female. *Calyx* three-leaved. *Corol* three-petalled. *Styles* six. *Capsule* inferior six-celled.

Mercurialis. Male. *Calyx* three-leaved. *Corol* none.

Stamens nine to twelve.

Female. *Calyx* three-leaved. *Corol* none.

Styles two. *Capsule* two-grained.

MONADELPHIA.

Juniperus, Male. *Ament* (conical), *Corol* none. *Stamens* three.

Female. *Calyx* three-parted. *Corol* three-petalled, *Styles* three. *Berry* inferior, three-seeded, calycine.

Taxus. Male. *Calyx* four-leaved. *Corol* none. *Anthers* eight-cleft.

Female. *Calyx* four-leaved. *Corol* none. *Stigma* one. *Berry* one-seeded, upper half wanting.

SYNGENESIA.

Ruscus. Male. *Calyx* six-leaved. *Corol* none. *Stamens* five.

Female. *Calyx* six-leaved. *Corol* none. *Pistil* one. *Berry* three-celled, two-seeded.

Class XXIII. POLYGAMIA.

MONOECIA.

Holcus. Hermaphrodite. (*Calyx*) *Glume* one to three-flowered. (*Corol*) *Glume* two-valved. *Stamens* three. *Styles* two. *Seed* one.

Male. (*Calyx*) *Glume* one-flowered. (*Corol*) *Glume* two-valved. *Stamens* three.

Ægilops. Hermaphrodite. (*Calyx*.) *Glume* three-flowered. (*Corol*) *Glume* three-awned. *Stamens* three. *Styles* two. *Seed* one.

Male, (*Calyx*) *Glume* three-flowered, (*Corol*) *Glume* three-awned. *Stamens* three.

Valantia,

Valantia. Hermaphrodite. *Calyx* none. *Corol* four-parted. *Stamens* four. *Style* bifid. *Seed* one.

Male. *Calyx* none. *Corol* three or four-parted. *Stamens* three or four.

Parietaria Hermaphrodite. *Calyx* four-cleft. *Corol* none. *Stamens* four. *Style* one. *Seed* one.

Female. *Calyx* four-cleft. *Corol* none. *Style* one. *Seed* one.

Atriplex. Hermaphrodite. *Calyx* five-leaved. *Corol* none. *Stamens* five. *Style* bifid. *Seed* one.

Female. *Calyx* two-leaved. *Corol* none. *Style* bifid. *Seed* one.

Acer. Hermaphrodite. *Calyx* five-cleft. *Corol* five-petalled. *Stamens* eight. *Pistil* one. *Capsule* two or three, one-seeded, terminated by a wing.

Male. *Calyx* five-cleft. *Corol* five-petalled. *Stamens* eight.

DIOECIA.

Fraxinus. Hermaphrodite. *Calyx* none, or four-parted. *Corol* none, or four-petalled. *Stamens* two. *Pistil* one. *Seed* one.

Female. *Calyx* none, or four-parted. *Corol* none, or four-petalled. *Pistil* one. *Seed* one.

Class XXIV. CRYPTOGRAMIA.

FILICES.

1. *Fructifications in spikes.*

Ophioglossum. *Spike* jointed. *Fructifications* opening horizontally all round. (*Indusium* covering the whole spike. *Caps.* imbricated, numerous, many-seeded. Willdenow.)

Equisetum. *Spike* scattered. *Fructifications* peltate, valved at the base. (Hermaph. *Receptacle* peltate, stipitate. *Indusiums* somewhat cylindrical, horn-shaped. *Filaments* two, both extremities anther-bearing. *Seed* single, naked, Willd.)

Lycopodium. *Spikes* oblong, with imbricated scales, or leaves. *Fructifications* axillary, reniform, two-valved, elastic, many-seeded.

Osmunda. *Spike* racemous. *Fructifications* two-valved. (*Indusium* covering the capsules closely in the form of a globe. Willd.)

2. *Fructifications frondose, on the under surface.*

Acrostichum. A *Spot* occupying the whole disk. (*Caps.* occupying the whole under surface of the frond, covered by an *indusium*. Willd.)

Polipodium. Dots on the disk distinct. (Male-Fem. *Caps.* disposed in heaps, covered by an *indusium*, and scattered over the inferior surface of the Frond. Willd.)

Asplenium. *Lines* on the disk nearly parallel, various. (Male-Fem. *Caps.* scattered over the disk of

the Frond in lines covered by an indusium. Willd.)

Blechnum. *Lines* on the disk contiguous and parallel to the mid-rib on both sides.

Pteris. *Lines* along the circumference of the margin. (Male-Fem. *Caps.* forming a marginal line, covered by an indusium. Willd.)

Adiantum. *Spots* covered with the reflected margin of the points of the frond.

Trichomanes. *Fructifications* solitary, placed on the very margin of the frond.

3. *Fructifications* at the root, or very near it.

Pilularia. *Fructification* (globular) four-celled.

Isoetes. *Fructifications* two-celled.

MUSCI*.

1. *Not calyptred.*

(Or with only the relics of a calyptre.)

Sphagnum. *Capsule* with an even mouth. (*Capsule* roundish, lidded, *mouth* even. *Calyptre* imperfect, torn, the lower part investing the base of the capsule.)

Lycopodium. *Capsule* two-valved, sessile (see above).

2. *Calyptred dioicous.*

Polytrichum. *Capsule* on a very small marginate apophysis. (*Caps.* sometimes on a small apophysis, *Calyptre* hairy.)

* The essential characters and divisions of the Musci, as given by *Linnaeus*, have been justly thought by some botanists as subject to objections. In the above synoptical view, the term capsule has been substituted for anther, in conformity to Hedwig, who has demonstrated that *true seeds* are contained in what is supposed by *Linnaeus* to be the anther, and that the real anthers are situated in the flowers formerly considered as females.

Splach-

Splachnum. *Capsule* on a a very large apophysis.

Mnium. *Capsule* without any apophysis.

3. *Calyptræd monoicous.*

Fontinalis. *Capsule* (almost) sessile, enveloped in an imbricated perichæcium.

Buxbaumia. *Capsule* peduncled, membranous on one side. (*Lid* obliquely inserted.)

Hypnum. *Capsule* on a lateral peduncle, issuing out of a perichæcium. (perichæcium imbricated).

Phascum. *Capsule* lidded, mouth ciliate. (*Caps.* without a distinct separating lid. *Calyptræ* minute deciduous).

Bryum. *Capsule* on a terminal peduncle, arising from a tubercle. (*Caps.* lidded, without an apophysis, on a lateral or terminal peduncle, not proceeding from an imbricated perichæcium).

ALGÆ.

1. *Terrestrial.*

Jungermannia. *Flower* calyx simple, four-valved. (Male-Fem. *Capsule* four-valved. *Seeds* furnished with a thread. Willd.)

Morchantia. *Flower* common calyx peltate, flowering underneath. (Male-Fem. *Receptacle* peltate, seed-bearing underneath. *Cups* viviparous. Willd.)

Targionia. *Flower* calyx two-valved. (*Seeds* very numerous, collected into a globe. Smith).

Sphærocarpos. (Micheli) *Flower* calyx pyriform, perforated at the top. *Caps.* spherical, many-seeded.

Antho-

- Anthoceros.** *Flower* calyx tubular. *Caps.* subulate, two-valved. (Male-Fem. *Caps.* linear, two-valved. *Seeds* adhering to the dissepiment. Willd).
- Blasia.** *Fructification* cylindrical, tubular.
- Riccia.** *Fructification* granules, imbedded in the frond. (Male-Fem. *Capsules* roundish on the surface of the frond. Willd).
- Lichen.** *Fructification* receptacle even, glossy. (Male. Scattered warts. Fem. Smooth shields or tubercles, with the seeds imbedded. Smith).
- Byssus.** (*Fructification?*) *Fibres.* Simple, downy.

2. Aquatic.

- Tremella.** A. gelatinous. (*Fructification* scarcely perceptible)†.
- Ulva.** A. membranous. (*Frond* membranous or gelatinous. *Seeds* solitary, scattered, under the cuticle. Goodenough and Woodward).
- Fucus.** A. coriaceous. (*Seeds* produced in crowded tubercles opening at the summit. Goodenough and Woodward).
- Conferva.** A. capillary. (*Seeds* included in round, solitary, closed, projecting, adnate tubercles.—(Goodenough and Woodward).

† This genus, which is transferred to the Fungi by Willdenow and Sibthorp, differs from *Lichen* in the tubercles and shields not being obvious.

FUNGI.

1. *With a Pileus.*

- Phallus. *Pileus* even underneath. (*Capsules* disposed in a reticulated manner. Willd.)
- Hydnum. *Pileus* echinate underneath. (*Capsules* acuminate, projecting. Willd.)
- Boletus. *Pileus* porous underneath. (*Capsules* concealed in the pileus, open at the apex. Willd.)
- Agaricus. *Pileus* gilled underneath. (*Capsules* disposed in the gills. Willd.)
- Merulius. *Pileus* veined underneath. (Haller).

2. *Without a Pileus.*

- Helvella. F. turbinate. (Surface on every side even).
- Clavaria. F. oblong. (*Fungus* oblong, simple, or branched. *Seeds* dispersed or collected in tubercles opening at the top.)
- Peziza. F. campanulate. (*Fungus* concave. *Seeds* on the upper surface, scattered or collected in a pericarp).
- Auricularia. F. flattish, ear-shaped. (Bulliard).
- Lycoperdon. F. globular. (*Fungus* solid; or hollow, opening at the top, and emitting mealy seeds mostly intermixed with fibres, or a globular capsule).
- Clathrus. F. latticed. (*Fungus* spherical or cylindrical, latticed. *Seeds* escaping through every of part of the surface).
- Trichia. F. *Capsule* roundish, mostly opening horizontally. *Seeds* entangled in woolly fibres. (Haller).

- Mucor.** F. vesicular, stipitate. (Stalk filiform, supporting a thin globular capsule).
- Reticularia.** F. of an irregular form, at first pulpy, opening indiscriminately. (Bulliard).
- Sphæria.** F. various. *Capsule* hard, mostly spherical, filled with a powder without evident filaments, opening at the top. (Haller).
- Uredo.** F. a mealy powder, without a pericarp, under the cuticle of plants.

Besides the twenty-four classes explained in the preceding pages, *Linnaeus* has, in his *Genera Plantarum* given an Appendix, which in the *Ordo Generum* prefixed to that work, he terms the twenty-fifth class. It contains only one order, viz. *Palmæ*, comprehending such plants as have a *spadix* and *spathe*.

This order contains nine genera, *Chamærops*, *Borassus*, *Corypha*, *Cocos*, *Phoenix*, *Elais*, *Areca*, *Elate*, and *Caryota*.

Although the *palmæ* have hitherto been kept distinct, they might be, with great propriety, incorporated amongst the other classes; for example, *corypha*, &c. are hermaphrodite, hexandrous, and might consequently be referred to the 6th class; *areca*, &c. to Monoecia; and *chamærops* to Polygamia.

A
DICTIONARY

OF

BOTANICAL TERMS.

With the English before the Latin.

A

Abbreviated, *abbreviatus*.—see short.

Abortive, *abortivus seu abortiens*, falling off before maturity. It is likewise used in the same sense as *barren*.

Abrupt, *abruptus*, when a pinnate leaf terminates abruptly; that is, without a tendril or a leaflet.

Acalyptrate, *acalyptratus*, without a calyptré.

Acerose, *acerosus*, linear, persisting.

Acicular, *acicularis*, resembling a small needle, needle-shaped.

Acid, *acidus*.

Acinaciform, *acinaciformis*, scymetar-shaped.

Acotyledonous, *acotyledonis, seu Acotyledoneus*, seeds without lobes, producing no seminal leaves when they vegetate.

Acrid, *acris*.

Acuminate, *acuminatus*, when a leaf terminates in a subulate point.

Acute,

Acute, *acutus*, when a leaf, &c. terminates in an acute angle.

Adductors, *adductores, seu opitulatores*, bodies accompanying the pistil, and resembling it in form and structure. These bodies, according to Hedwig, are barren pistils.

Adnate, *adnatus*, when leaves are joined by the upper surface to the base of the branch.

Adverse, *adversus*, denotes a leaf turning the upper side to the south or sun, not to the sky.

Aggregate, *aggregatus*.

Aggregate Flower, *aggregatus flos*, the receptacle dilated, the florets somewhat peduncled.

Air-bladder, *folliculus*, a distended bladder-like seed-vessel, opening on one side, as in the *periwinkle*, or *bladder-senna*. It is also used to signify other kinds of distended air-vessels.

Albumum, a soft white substance, found in trees, between the inner bark and the wood, composed of layers of the former, which have not yet attained the solidity of the latter. By workmen and dealers in timber, it is termed sap.

Algæ, the name of the third order of the class *Cryptogamia*.

Alpine, *alpinus*.

Alternate, *alternus*, branches, leaves or flowers, shooting regularly one above another, as the leaves of the *borage*, &c.

Alternately, *alternatim*.

Alveolate, *alveolatus, s. favosus*, honey-combed.

Ambrosial, *ambrosiacus*.

Ament, *amentum*, a catkin consisting of a common chaffy gemmaceous receptacle.

Amentaceous,

Amentaceous, *amentaceus*, growing in an ament.

Anastomosing, *anastomosans*, applied to denote the union of the branches of one gill with each other, and with those on every side of it.

Androgynous, *androgynus*, plants bearing both male and female flowers; for instance, plants belonging to the class Monoecia.

Angiospermia, the name of the second order in the class Didynamia.

Angiospermous, *angiospermus*, having the seeds in a capsule.

Angled, or **Angular**, *angulatus*, stem, &c. having edges or corners; opposed to cylindrical. A stem or stalk may have one, two, three, four, or more angles or corners.

Annual, *annuus*, living only one year.

Annulate, *annulatus*.—See Ringed.

Anomalous, *anomalus*, irregular, subject to no certain order.

Anther, *anthera*, a part of the flower containing the pollen; and when mature, bursting and scattering it.

Antheriform, *antheriformis*, anther-like.

Anthesis, the period at which the pollen is applied to the stigma.

Apetalous, *apetalus*, destitute of petals.

Apex, the point, end, or termination of a leaf, &c.

Aphyllous, *aphyllus*, leafless.

Apiculate, *apiculatus*, *s. aculeatus*, prickly.

Apophysis, a process, or excrescence, upon which the capsule of some musci is placed.

Appendage, *Appendicula*, an additional part, generally leaf-like.

Appendaged,

Appendaged, or Appendiculate, *appendiculatus*, *aurillus*,
s. auriculatus, mostly applied to express an addi-
 tional small leaf.

Appressed, *appressus*, expressive of a leaf approaching the
 stem with its disk.

Approaching,—see converging.

Approximate, *approximatus*, near to, or near together.

Arachnoid, *arachnoideus*, *s. araneosus*, covered with a cob-
 web-like substance; or resembling a cobweb.

Arboreous, *arboreus*, tree-like, perennial.

Arborescent, *arborescens*, gradually becoming firm and
 woody.

Arch, *forix*, a small scale or valve, observed in the throat
 of the corol of some flowers.

Arched, *fornicatus*, turned like an arch, as the upper lip of
 ringent flowers, e. g. *Lamium*, &c.

Aril, *arillus*, the outer proper coat of the seed, falling off
 spontaneously.

Arilled, *arillatus*, furnished with an aril.

Arms, *arma*, weapons of defence.

Aromatic, *aromaticus*.

Arrow-shaped, *sagittatus*, shaped like the head of an ar-
 row.

Ascending, *ascendens*, rising archwise upwards.

Asexual, *asexualis*, destitute of sex, and flowers, bearing
 buds only.

Ash-coloured, *cinereus*, *s. cineraceus*.

Assurgent, *assurgens*, rising archwise.

Attenuated, *attenuatus*, diminishing gradually in thickness
 towards the extremity.

Auriculate, *auriculatus*, ear-shaped.

Autum-

Autumnation, *autumnatio*, *s. defoliatio*, the time at which plants shed their leaves.

Awl-shaped, *subulatus*, linear at the base, tapering towards the point.

Awn, *arista*, the slender sharp substance growing to the valves of corn or grass, and frequently called a beard. It is very evident in oats and barley. It is sometimes used to signify a sharp point terminating a leaf, &c.

Awned, *aristatus*, having an awn.

Awnless, *muticus*, without awns.

Axil, *axilla*, the angle which a branch forms with a stem; or a leaf with a branch.

Axillary, *axillare*, *s. subalare*, a leaf inserted at the base of the branch,

B

Baccation, *baccatio*, the formation of the pericarp into a berry, the pulp assisting the semination.

Bacciferous—see Berry-bearing.

Back, *dorsum*, the region opposite the belly.

Barbs, *glochides*, rigid bristles, headed with small retroverted prickles.

Bark, *cortex*, the universal covering of the stems, roots and branches of vegetables. Strictly speaking, the bark consists of three coats: 1. The cuticle, *epidermis*. 2. The outer bark, *cortex*, 3. The inner bark, *liber*.

Bark-like—see Cortical.

Barren, *sterilis*, not forming pollen.

Base, *basis*, the extremity of the seed in which the navel is placed; or that part of a leaf, &c. nearest to the branch or stem.

L

Basilar,

- Basilar, *bāsilaris*, at the base of the stem.
- Beak, *rostrum*, a process shaped like the beak of a bird.
- Beaked, *rostratus*, terminating in a filiform beak.
- Beard, *barba*, parallel hairs.
- Bearded, *barbatus*, beset with parallel hairs.
- Beardless, *imberbis*, destitute of a beard.
- Bell-shaped—see Campanulate.
- Belly, *venter*, *s. ventriculus*.
- Bellying—see Ventricose.
- Bent, *flexus*.
- Berried, *baccatus*, resembling a true berry.
- Berry, *bacca*, a pulpy pericarp without valves, in which the seeds are naked, as in the goosberry.
- Berry-bearing, *baccifer*.
- Bicapsular, *bicapsularis*, having two capsules.
- Bidentate—see Two-toothed.
- Biennial, *biennis*, perishing after two years.
- Bifarious, *bifarius*, pointing from opposite sides.
- Bifariously, *bifariam*.
- Bifid, *bifidus*, cleft, or cloven into two.
- Biflorous—see Two-flowered.
- Bigeminate Leaf *folium bigeminum*, a dichotomous petiole connecting several leaflets at the apex.
- Bijugous, *bijugum*, a pinnate leaf, bearing two pair of leaflets.
- Bilabiate—see Two-lipped.
- Bilamellated, *billamellatus*, composed of two membranous lamellæ or plates.
- Bilobate—see Two-lobed.
- Bilocular—see Two-celled.
- Binate, *binatum*, a digitate leaf consisting of two leaflets.
- Bipartite, *bipartitum*, a leaf divided into two segments.
- Bipinnate

- Bipinnate**, *bipinnatum*, a leaf doubly pinnate.
- Bipinnatifid**, *bipinnatifidum*, almost bipinnate, the segments not extending to the mid-rib of the leaf.
- Biternate**, *biternatum*, a leaf doubly ternate, or doubly threefold.
- Bitter**, *amarus*.
- Bivalve**, *bivalvis*, consisting of two valves.
- Black**, *niger*, *s. ater*, &c. when all the rays of light are absorbed.
- Blackish**, *subniger*, somewhat black.
- Bladders**, *utriculi*, small vessels filled with a secreted fluid.
- Blood-coloured**, *sanguineus*.
- Blossom**—see *Corol*.
- Blue**, *cæruleus*.
- Boat-shaped**, *cymbiformis*, *s. navicularis*.
- Bony**, *osseus*, hard as bone.
- Border**—see *Lamina*, and *Limbus*.
- Bossed**, *umbonatus*, having a prominent point or boss, (*umbo*) in the centre, as the pileus of an Agaric.
- Bowed**, *arcuatus*, bent like a bow.
- Brachiate**, *brachiatus*, with the branches opposite cross-wise.
- Bractes**, *bracteæ*, floral-leaves differing in shape or colour from the other leaves of the plant, they are generally placed on the *fruit-stalk*, and often so near the flower, as in some instances to be easily mistaken for the calyx; but the calyx dries or withers when the fruit is ripe, whereas the floral leaves endure as long as the other leaves of the plant. Examples of floral-leaves, may be seen in the *Lime-tree*, *Hellebore*, *Passion-flower*, *Wild Marjoram*, &c.

Bracteate, *bracteatus*, furnished with bractes.

Bracteless, or Ebracteate, *ebracteatus*, without a bractæ.

Branch, *ramus*, a part of the stem.

Branched, or Branching, *ramosus*, divided into lateral branches.

Branch-leaf, *folium rameum*, attached to the branch.

Branchlet, *ramulus*, the subdivision of a branch.

Branch-peduncle, *pedunculus rameus*, a peduncle arising from a branch.

Branny, *furfuraceus*, covered with branny scales.

Bristles, *setæ*, somewhat rigid and cylindrical hairs.

Bristlets, or small bristles, *setulæ*.

Bristle-bearing, *setifer*.

Bristle-shaped, *setaceus*, slender, and nearly cylindrical, of the size of a bristle.

Bristly, *setosus*, rough with numerous hairs and bristles.

Brittle, *fragilis*.

Broad-leaved, *latifolia*, when in laciniated and slender leaved plants, many leaflets and segments grow together.

Brown, *fuscus*.

Brownish, *subfuscus*.

Bud, *gemma*, the hybernacle of a plant from the rudiments of future leaves, on the stem or branches.

Budding—see Gemmation.

Buff-colour, *stramineus*, *s. subflavus*.

Bulb, *bulbus*, the hybernacle of a plant from the rudiments of past leaves, sitting on the root.

Bulb bearing, or Bulbiferous, *bullifer*, *s. bulbiger*.

Bulbous, *bulbosa*, a root furnished with a bulb.

Bullate, *bullatum*, expressive of a leaf when its surface rises high between the veins, so as to appear like blisters.

Butterfly-shaped—see *papilionaceous*.

Caducous

C

Caducous, *caducus*, decaying very quickly; applied to such parts of a plant as fall off very soon, or do not remain the whole summer.

Calcarate—see Spurred.

Calycine, *calycina*, inserted in, or fixed on the calyx.

Calyce, *calyculus*, the proper cover of the seed.

Calyceled, *calyculatus*, surrounded with another smaller calyx, or perianth at the base.

Calypstre, *calyptra*, the calyx of a moss, covered, placed upon the anther (capsule).

Calyp tred, or **Calyptrate**, *calyptratus*, furnished with a calypstre.

Calyx, *calyx*, the bark of the plant present in the fructification.

Calyx-scales, *squamæ calycinæ*, scales of the calyx.

Calyx-leaflets, *foliola calycina*, leaflets of the calyx.

Calyx-thorns, *spinæ calycinæ*, thorns fixed on the calyx.

Campanulate, *campanulata*, a corol bell-shaped, ventricose without a tube.

Canaliculate—see channelled.

Cancellate, *cancellatus*, latticed.

Capillaceous, *capillaceus*, or **Capillary**, *capillaris*, slender as a hair, hair-like.

Capitate, *capitatum*, a term used to express the summit of a stigma, approaching in form to a globe.

Capsule, *capsula*, a hollow pericarp opening in a determinate manner.

Capsular, or **Capsuled**, *capsularis*, having a capsule.

Carinated—see keeled.

Cartilaginous, *cartilagineum*, applied to a leaf having a margin firmer than the disk.

- Case, *theca*, *s. vasculum seminale*, the lower part of the capsule containing the seeds.
- Castrated, *castratum*, a term designed to signify a filament elevating a barren anther, or none at all.
- Caulescent, *caulescens*, having a stem different from that which supports the flower, or becoming like a stem, as the root of a cabbage, &c.
- Cauline, *caulinus*—see stem-leaf.
- Cell, *loculamentum*, a hollow chamber for the seeds. According to the number of cells a capsule is termed, One-celled, *unilocularis*; Two-celled, *bilocularis*; Three-celled, *trilocularis*, &c; Many-celled, *multilocularis*.
- Celled, *locularis*, having cells.
- Central, *centralis*, occupying the centre; as when a stalk, or stipe, is inserted in the centre of the pileus.
- Cernuous, *cernuus*, applied to a peduncle, having an apex which points towards the earth.
- Cespitose, *cæspitosæ*, plants which produce many stems from one root, and form a surface of turf or sod.
- Chaff, *palea*, a thin dry membranous body, separating the florets in some genera of the class Syngenesia.
- Chaffy, or Chaffy-like, *paleaceus*, furnished with chaffs, or like chaffs.
- Channelled, *canaliculatus*, hollowed longitudinally with a deep channel, or furrow.
- Character—see Natural, Essential, Factitious, Habitual.
- Chesnut-colour, *castaneus*.
- Chinky, *rimosus*, abounding with clefts and chinks.
- Cicatrized, *cicatrixatus*, scarred.
- Cilia, parallel hairs, like eye-lashes.

Ciliate,

- Ciliate**, *ciliatum*, a leaf having parallel bristles disposed along the margin longitudinally, in the manner of the eye-lashes.
- Circinal**, *circinale*, a term of foliation, expressive of the leaf within the bud, or gem, being rolled in spirally downwards, so that the apex occupies the centre.
- Circular**—see orbicular.
- Cirrhiferous**—see tendril-bearing.
- Cirrhose**—see tendrilled.
- Class**, *classis*, a primary division of a system.
- Claw**, *unguis*, the lower part of a many-petaled corol, fixed to the receptacle.
- Clawed**, *unguiculatus*, furnished with a claw.
- Cleft**, *fissum*, a leaf divided by linear indentations, the margin being straight—see two-cleft, &c.
- Climbing**, *scandens*, a term applied to plants which take the advantage of some adjoining body to support and raise themselves.
- Close**, *densa*, *s. coarctata*, a panicle having the florets close as well as numerous.
- Closed**, *clausa*, a term employed to denote the throat when stopped by hairs, converging scales, or valves, disposed in the form of an arch.
- Club-shaped**, *clavatus*, *s. clavæformis*, thinner at the base, and thicker towards the apex.
- Coadunate**, *coadunata*, when several leaves are connected with each other.
- Coalesced**, *coalitus*, united into one body.
- Coated**, *tunicatus*, clothed with membranes.
- Cobweb-like**, *araneosus*, *s. arachnoideus*.
- Coccum**, a cell of some fruits, containing one seed.

Cochleate—see spiral.

Cohering, *coherentes*, anthers connected at the base, apex, &c.

Collar, *collare*.

Collared, *collari instructus*, when the stalk of a fungus is surrounded by a collar at the top, into which the gills are inserted.

Colour, *color*, proceeding from that disposition of the external surfaces of plants whereby they variously modify and reflect the rays of light falling on them.

Coloured, *coloratum*, a leaf of a colour different from green.

Column, *columella*, s. *columnella*, the upright little pillar in the center of some capsules to which the seeds are fixed.

Columnar, *teres*, s. *columnaris*, nearly cylindrical.

Coma, or tuft, *coma*, a species of bracte terminating the stem.

Comb-like—see pectinate.

Comose, *comosa*, a spike terminated by leaflets.

Common, *communis*.

Common Peduncle, *pedunculus communis*, bearing many flowers.

Common Bud, or gem, *gemma communis*, including both leaves and flowers.

Common Receptacle, *receptaculum commune*, sustaining many flowers and their fruit.

Common Perianth, *perianthium commune*, including several flowers.

Compact, *compactus*, firm.

Compact,

Compact, *coarctatus*, growing close, and as it were pressed together.

Complete, *completus*; a flower is termed complete when it has both calyx and corol.

Compound, *compositus*.

Compound Flower, *flos compositus*, the receptacle dilated, entire, the florets sessile.

Compound Umbel, *umbella composita*, all the peduncles supporting umbellets on their tops.

Compound Spike, *spica composita*, consisting of many spikelets growing on the peduncle.

Compound Corymb, *corymbus compositus*, when all the flowers are elevated upon pedicels, sitting upon the common peduncles.

Compound Fructification, *fructificatio composita*, consisting of several confluent florets.

Compound Corol, *corolla composita*, consisting of several florets within a common perianth, upon a common receptacle.

Compressed, *compressus*, a term applied to a cylindrical substance more or less flattened.

Compressed Leaf, *folium compressum*, pulpy, the sides more flattened than the disk.

Concave, *concavus*, hollowed.

Concave leaf, *folium concavum*, when the margin is more contracted than the disk, and the disk depressed.

Concealed, *latitans*.

Conceptacle, *conceptaculum*, a follicle or pericarp of one valve, opening on one side in a longitudinal direction, and having the seeds loose in it.

Conduplicate, *conduplicatus*, folded or doubled together.

Conduplicate,

Conduplicate, *conduplicatum*, a term of foliation, when the sides of a leaf are applied parallel to one another, (the leaf being doubled at the mid-rib).

Cone, *conus*—see Strobile.

Confluent, *confluentia*, leaves cohering with each other at the base.

Conform, *conformis*, applied to any part of a plant twisting always the same way.

Conglomerate, *conglomeratus*, heaped together.

Conical, *conicus*, resembling a cone.

Conjugate, *conjugatum*, a pinnate leaf with only two lateral leaflets.

Connate, *connata*, two opposite leaves joined at their base: it is applied likewise to express the filaments when conjoined into one body (so as to form a tube at the base).

Connate Anthers, *antheræ connatæ*, several anthers joined into one.

Contorted, *contortus*, twisted.

Contorted Corol, *corolla contorta*, when the edge of one petal lies over the next to it in an oblique direction, as in periwinkle.

Contorted Pericarp, *pericarpium contortum*, signifies a twisted pericarp.

Contrary, *contrarius*—see Transverse.

Converging, *connivens*, approaching each other at the top.

Converging Corol, *corolla connivens*, when the tops of the petals meet so as to close the flower.

Convex, *convexus*, opposed to concave, rising like the surface of a globe.

Convex-leaf, *folium convexum*, when the margin is more contracted than the disk, and the disk elevated.

Convolute,

Convolute, *convolutus*, rolled or twisted spirally.

Convolute Tendril, *cirrhus convolutus*, when twisted into rings.

Convolute Leaf, *folium convolutum*, a term of foliation, when the leaf is rolled spirally like a cowl.

Corcle, *corculum*, the rudiment of the new plant within the seed. It consists of two parts, the *plumule*, and the *roset* or *radicle*—see those terms.

Cordate, *cordatus*, heart shaped.

Cordate Leaf, *folium cordatum*, nearly ovate, hollowed out at the base, and without posterior angles.

Cork-like, *suberosus*, furnished with an outer bark, softish but elastic.

Coriaceous, *coriaceus*, resembling leather.

Cornered, *angulatus*, *s. angularis*.

Corniculate, or **Cornuted**—see **Horn-shaped**.

Corol, *corolla*, the inner bark, or liber of the plant, present in the flower.

Corolline, *corollinus*, inserted in the corol.

Corolliferous, or **Corol-bearing**, *corollifer*.

Coronet, or **Coronule**, *coronula*, a small crown.

Coroneted, or **Coronulate**, *coronulatus*, supporting a coronet.

Cortical, *corticalis*, consisting of leaves or scales.

Corticated, *corticatus*, covered with a rind (*cortex*).

Corymb, *corymbus*, formed from a spike, each flower being furnished with its proper peduncle and proportionally elevated.

Corymbous, *corymbosus*, having a corymb.

Cotyledon, *cotyledon*, the lateral bibulous body of the seed, falling off. It is used to denote not only the seed-lobe, but also the seed leaf.

Covered,

Covered, *tectus*. Anthers are said to be covered when concealed by the arched scales or valves in the throat of monopetalous flowers: as in *Anchusa*, &c.

Cowled, *cuculatus*, cone-shaped.

Cowled Leaf, *folium cucullatum*, when the sides converge at the base, and are dilated at the apex.

Cracking—see Chinky.

Creeping, *repens*, *s. reptans*.

Creeping Root, *radix repens*, running to some distance horizontally, and then sending off radicles or fibres.

Creeping Stem, *caulis repens*, lying upon the earth and sending out roots.

Crenate, *crenatus*, notched.

Crenate Leaf, *folium crenatum*, when the margin is cut in such a manner, that the notches do not incline towards either extremity. Doubly-crenate, *duplicato-crenatum*. Acutely-crenate, *acute crenatum*. Obtusely-crenate, *obtusely crenatum*.

Crenulate, *crenulatus*, having the margin cut into small notches.

Crested, *cristatus*, having an appendage like a crest, as the corol of common milkwort.

Crescent-shaped, *lunatus s. lunulatus*.

Crescent-shaped Leaf, *folium lunatum*, roundish, hollowed out at the base, with posterior acute angles.

Crisped—see Curled.

Crossed, Cross-shaped, or cruciform, *cruciformis*.

Cross-shaped Corol, *corolla cruciata*, spreading with four equal petals.

Cross-wise, *cruciaticum*.

Crowded,

Crowded, *confertus*, applied to denote that the branches or leaves, &c. are very numerous, so as almost to conceal the whole surface of the plant.

Crown, *corona*, a calycle adhering to the upper part of the seed, whereby it flies.

Crowned Capsule, *capsula coronata*, when the extremity is furnished with leaflets arranged in the form of a crown.

Crown-shaped, *coroniformis*.

Cruciform—see Crossed.

Cryptogamia, the name of the twenty-fourth class in the artificial system of Linnæus.

Cryptogamous, *cryptogamus*, having the fructification concealed, or scarcely if at all perceptible by the naked eye.

Cubit, *cubitus*, as long as from the bend of the elbow to the extremity of the middle finger. About eighteen inches, or half an English yard.

Culm, *culmus*, a trunk peculiar to grasses.

Cuneiform, *cuneiformis*, wedge-shaped.

Cuneiform Leaf, *folium cuneiforme*, gradually narrowed toward the base.

Cup-bearing, *scyphifer*, having small cups, as some of the lichens.

Cup-form, *scyphiformis*.

Curled Leaf, *folium crispum*, when the margin is luxuriant, so that the disk is longer than the rachis, or mid-rib.

Curtain, *volva*, the membranous calyx of a fungus.

Cuspidate, *cuspidatus*, prickly-pointed.

Cuspidate Leaf, *folium cuspidatum*, terminating in a setaceous point.

Cut-

Cut-round, *circumscissa*, applied to a capsule cut, or bursting all round horizontally.

Cuticle, *epidermis*—see Bark.

Cyathiform—see Glass-shaped.

Cylindrical, *cylindricus cylindracesus*, *s. teres*, without angles, every where of the same diameter.

Cymbiform—see Boat-shaped.

Cyme, *cyma*, a receptacle from the same universal centre, elongated into fastigate peduncles, but with the partial ones scattered, or irregular.

D

Dagger-pointed—see Mucronate.

Decagynia, the name of an order in the Sexual system.

Decagynous, *decagynus*, having ten pistils.

Decandria, the name of the tenth class in the Linnæan System.

Decandria, also the name of an Order.

Decandrous, *decandrus*, having ten stamens.

Decapetalous—see Ten-petalled.

Decaphyllous.—see Ten-leaved.

Deciduous, *deciduus*, applied to such parts of a plant as fall off early, or at the end of one Summer.

Deciduous Leaves, *folia decidua*, falling off at the approach of Winter.

Deciduous Perianth, *perianthium deciduum*, falling off with the corol.

Deciduous Corol, *corolla decidua*, falling off with the flower.

Deciduous Style, *stylus deciduus*, falling off after the efflorescence.

Declined, *declinatus*, descending archwise.

Declining, *declinans*.

Decom-

Decomound, *decompositus*, doubly compound.

Decumbent, *decumbens*, lying down; a stem is termed decumbent when it lies on the ground, with the base higher than the other parts; a flower is said to be decumbent, when the stamens and pistils are bent down to its lower side.

Decurrent Leaf, *folium decurrens*, when the base of the leaf extends downwards along the stem.

Decursive Leaf, *folium decursivum*, a pinnate leaf, having the leaflets running down the petiole.

Decussated Leaves, *folia decussata*, when disposed in such a manner, that, on their points being inspected, they appear in four rows.

Dedaleous, *dedaleum*, applied to denote a leaf, at once flexuose and ragged.

Deflected Branches, *rami deflexi*, declining downwards in the form of an arch.

Deflorate Anthers, *antheræ defloratæ*, having shed their pollen.

Defoliation, *defoliatio*, the time at which plants shed their leaves.

Dehiscent Anthers, *antheræ dehiscentes*, gaping, or standing open, whether at the top or side.

Deltoid, *deltoideus*, *s. deltoides*, triangular, resembling the Greek Delta.

Deltoid Leaf, *folium deltoideum*, rhomb-shaped, having four angles, of which the lateral ones are nearer the base than the others.

Demersed, *demersus*—see Submersed.

Dense Panicle, *panicula densa*, *s. coarctata*, when the florets are close, as well as numerous.

Dentate

Dentate—see Toothed.

Denticulate, *denticulatus*, furnished with very small teeth.

Dependent Leaf, *folium dependens*, hanging down, or pointing directly to the earth.

Depressed Leaf, *folium depressum*, pulpy, with the disk more flattened than the sides.

Diadelphia, the name of the seventeenth class in the Linnean system.

Diadelphous, *diadelphus*, having the stamens united by their filaments into two sets.

Diandria, the name of the second class in the Linnean system.

Diandria is also the name of an Order.

Diandrous, *diandrus*, having two stamens.

Diaphanous, *diaphanus*, transparent, or transmitting the rays of light.

Dichotomous, *dichotomus*, forked or divided constantly into pairs.

Dicocceous—see Two-grained.

Dicotyledonous, *dicotyledones*, plants having their seeds furnished with two cotyledons, or seed lobes.

Didymous, *didymus*, double.

Didymous Anthers, *antherræ didymæ*, gibbous outwardly with two protuberances.

Didymous Capsule, *capsula didyma*, projecting outwardly with two protuberances.

Didynamia, the name of the fourteenth class in the sexual system.

Didynamous, *didynamus*, s. *didynamicus*, having four stamens, two of which are constantly shorter.

Difform, *difformis*, irregular in form; of different shapes.

Difform

Difform Corol, *corolla difformis*, when the petals or their segments are of different forms. Plants are termed difform, which first twist one way and then another.

Diffuse, *diffusus*, spreading; applied to signify a trunk, the branchlets of which expand.

Diffuse Panicle, *panicula diffusa*, when the pedicels spread out at somewhat an acute angle, irregularly.

Digitate, *digitatus*, finger-like.

Digitate Leaf, *folium digitatum*, when several leaflets are connected at the extremity by a single petiole.

Digynia, the name of an Order.

Dygynous, *dygynus*, having two pistils.

Dicæcia, the name of the twenty-second class of the Linnaean System.

Dicæcia, is also an Order of the class Polygamia.

Dioicous, *dioicus*, having male and female flowers, on distinct individuals.

Dipetalous—see Two-petalled.

Diphyllous—see Two-leaved.

Discoid, *discoideus*, a compound flower, which has a disk like a radiate flower, but no ligulate florets.

Disk, *discus*, the disk of a leaf is its whole surface, *discus supinus* being the upper, and *discus pronus* the under surface. The disk of a flower is the central part in radiate compound flowers; and it is applied to aggregate flowers, when the florets in the centre, differ from those in the circumference, as in umbels.

Disk-like, or **Discoid**, *disciformis*, s. *discoideus*.

Dissected—see gashed.

Ensiform, *ensiformis*, sword-shaped.

Ensiform Leaf, *folium ensiforme*, two-edged, gradually tapering from the base to the apex.

Entire, *integer*, undivided.

Entire Leaf, *folium integrum*, without any indentation.

Ephemeral, *ephemerus*, applied to a flower continuing only one day.

Epidermis—see Bark.

Epiphyllous, *epiphyllous*, bearing seeds on the leaf.

Equal, *æqualis*, regular. A perianth is termed equal when all the segments are of the same size.

Equitant, *equitans*, folded one upon another. Leaves are termed equitant, when disposed within the bud or gem, with their edges converging in an opposite situation, so that one includes the other.

Erect Trunk, *truncus erectus*, rising almost perpendicularly. This term is likewise applied to branches, or leaves when placed in a position nearly perpendicular.

Eroded, *erosum*, applied to a leaf sinuated, with very small indentations and unequal segments.

Essential, *essentialis*. An essential character serves to distinguish, by a single circumstance, one genus from every other belonging to the same natural as well as artificial order. It consists of the most particular mark of the genus to which it is applied: as for example, the bifid filaments of Cole-wort; the nectary at the base of each petal in Crow-foot, &c.

Estivation, *æstivatio*, the disposition of the petals within the floral bud.

Even, *lævis*, having an equal surface.

Evolvate

Evolvate, *evolvatus*, without a wrapper.

Ever-green, *sempervivens*, flourishing in all seasons of the year.

Excavated, *excavatus*, hollowed.

Expanded, *expansus*, *s. patens*—see Spreading.

Exstipulate—see Stipule-less.

Extrafoliaceous, *extrafoliacea*, applied to a stipule placed beneath the leaf.

Eye, *hilum*, the external scar upon a seed, by which it was fixed to the pericarp; as in the bean.

F

Factitious, *factitius*, a factitious character serves to distinguish one genus from all the others, in the same order of an artificial arrangement. It consists of a greater or less number of characteristic marks.

Falcate—see Sickle-shaped.

Families, *familie*, vegetables according to Linnæus (*Philosophia Botanica*) comprehend seven families or tribes, viz. *Fungi*, *Algæ*, *Musci*, *Filices*, *Gramina*, *Palmæ*, *Plantæ*. The plantæ include all vegetables that are not contained in the preceding families. This division is drawn from a consideration of the whole vegetable, whereas the systematic or artificial distribution into twenty-four classes, is founded on the fructification alone.

Fan-shaped, *flabelatus*, *s. flabelliformis*.

Fasciate, *fasciatus*, resembling a band. A plant is termed fasciate, when several stems are conjoined into one broad, compressed band-like stem.

Fascicle, *fasciculus*, an assemblage of erect, parallel, fastigiate, approximate flowers, as in *Sweet Williams*, &c.

Fascicular,

Dissepiment, *dissepimentum*, the partition by which the seeds are collected into distinct chambers.

Distant, *distans*, far asunder.

Distichous—see Two-rowed.

Distinct, *distinctus*, *s. sejunctus*, unconnected, separate.

Divaricate, *divaricatus*, Spreading very far asunder.—
Branches are termed divaricate when they go off from the trunk at an obtuse angle.

Diverging, *divergens*, spreading almost horizontally.—
Branches are termed diverging when they go off from the trunk at a right angle.

Dodecagynia, the name of an Order in the eleventh class of the Linnean system.

Dodecagynous, *dodecagynus*, having twelve pistils.

Dodecandria, the name of the eleventh Class in the Sexual system.

Dodecandria is also the name of an order.

Dodecandrous, twelve-stamend, or having twelve-stamens.

Dolabriform—see hatchet-shaped.

Dorsal, *dorsalis*, applied to an awn, (*arista*) fixed on the back or outside of the glume.

Dorsiferous, *dorsifer*, bearing fructifications on the back of the leaf.

Dotted, or **Punctate**, *punctatum*, applied to a leaf, or receptacle sprinkled with hollow points.

Doubly-pinnate—see Bipinnate, &c.

Down, *lanugo*.

Downy, *lanuginosus*.

Dry, *siccus*, opposed to succulent. A drupe is termed dry when destitute of juice, juiceless.

Drupe, *drupa*, a stuffed valveless pericarp containing a nut.

Drupaceous

Drupaceous, *drupaceus*, having drupes, or drupe-like, as the fruit of the sea rocket.

Duration, *duratio*, the continuance of the life of the plant, or of its different parts.

E

Eared, *auritus*, applied to a petiole having leafy films at the base—see Appendaged.

Ear-shaped, *auriformis*.

Ebracteate—see Bracteless.

Ecalcarate—see Spurless.

Echinate, *echinatus*, beset with prickles like a hedge-hog, as the pericarp of Thorn-apple.

Eglandulous, *eglandulosus*, without glands

Elastic, *elasticus*, a pericarp is termed elastic which propels or scatters the seeds, by bursting with a sudden forcible motion.

Elastically, *elastice*.

Elliptical, *ellipticus*, resembling an ellipse.

Elliptical Leaf, *folium ellipticum*, lanceolate with the breadth of an ovate leaf, (differing from oval in being longer in proportion to its breadth.)

Emarginate, *emarginatus*, notched at the extremity.

Emarginate Leaf, *folium emarginatum*, terminated by a notch; acutely emarginate, *acute emarginatum*; obtusely emarginate, *obtusely emarginatum*.

Embracing, *amplexans*, s. *amplectens*—see Stem-clasping.

Endecandria, the name of an order in the class Monadelphia.

Enneandria, the name of the ninth class of the Sexual system.

Enneandria is also the name of an order.

Enneandrous, *enneandrus*, having nine stamens.

Fascicular, *fascicularis*, collected in bundles. A root is termed fascicular when consisting of fleshy parts, connected by a sessile base

Fascicled, or **Fasciculate**, *fasciculatus*, applied to express the situation of leaves when many of them proceed from the same point (in bunches or bundles.)

Fastigate, *fastigiatus*, having a flat or level top. A trunk is termed *fastigate* when the branches rise to an equal height

Fathom, *orgya*, about six feet, or the distance between the points of the fingers, when the arms are extended.

Fatty, *pinguis*.

Feathery, *plumosus*.

Feathery Pappus, *pappus plumosus*, consisting of feathered hairs.

Female, *femina*, flowers containing stigmas only.

Fencing round, *circumsepiens*—see fortifying round.

Fertile, *fecundus*, fruitful.

Fertile Anthers, *antheræ fecundæ*, replete with pollen.

Fibrous, *fibrosus*.

Fibrous Root, *radix fibrosa*, composed entirely of small threads, or fibres.

Filament, *filamentum*, the part elevating, and connecting the anther.

Filamentous, *filamentosus*.

Filices, the name of the first order of the Class Cryptogamia.

Filiform, *filiformis*, slender, every where of an equal thickness, thread-shaped.

Fimbriate, *fimbriatus*, fringed, the hairs not so regularly disposed as in the ciliate corol. The *Marsh-Trefoil* affords an example of a fimbriate corol.

Fistulous,

- Fistulous, *fistulosus*, tubular, hollow within.
- Five-capsuled—see Capsular.
- Five-celled—see Celled.
- Five-cleft—see Cleft, &c. &c.
- Flaccid, *flaccidus*, weak. A peduncle is termed flaccid which hangs down from the weight of the flower.
- Flat, *planus*. Leaves, &c. are termed flat which have an equal surface.
- Flattish, *planiusculus*.
- Fleshy, *carnosus*.
- Fleshy Capsule, *capsula carnosae*, resembling flesh.
- Fleshy Leaf, *folium carnosum*, filled within with a somewhat solid pulp. A legume is also termed fleshy when filled with a pulpy substance.
- Flexible, *flexilis*, bending readily without breaking.
- Flexuose, *flexuosus*. A stem is termed flexuose when bent in different directions.
- Floating, *natans*—see Natant.
- Floral Leaf, *folium florale*, nearest the flower. The floral leaf is to be distinguished from the bracte, which is also placed near the flower—see Bracte.
- Floral Bud, *gemma floralis*, including flowers only.
- Florescence, *florescentia*, the time at which plants put forth their flowers.
- Floret, *flosculus*, the partial or distinct small flower of a compound or aggregate flower.
- Flosculous, or Floscular, *flosculosus*, a floscular flower in the tubular floret of Syngenesious plants. *Semi-flosculous* has the same signification as *Ligulate*.
- Flourishing, *florens*, flowering, flourishing, retaining its verdure.
- Flower-bearing, or Floriferous, *florifer*.

Flower, *flos*, the stamens and pistils of a vegetable, with or without their coverings. The essential parts are the anther and germen with the stigma.

Folded or Plaited, *plicatus*, applied to a stem when the branches are so much interwoven as to form a knot, furnished with leaves.

Foliaceous, *foliaceus*, furnished with leaves, leafy.

Foliaceous Glands, *glandulae foliaceae*, inserted in the leaves.

Foliaceous Spike, *spica foliacea*, intermixed with leaves.

Foliar, or Leaf Tendril, *cirrhus foliaris*, growing upon the leaf.

Foliar Bud, *gemma foliaris*, including leaves only.

Foliation, *foliatio*, *s. vernatio*, the time of unfolding the leaves—see Vernation.

Follicle, *folliculus*, a one-valved pericarp, opening longitudinally on one side, the seeds not fixed to the suture. (Formerly termed a conceptacle.)

Foot, *pes*, as long as from the bend of the elbow to the base of the thumb, twelve inches.

Forks, *furcae*, prickles divided into two or more at the ends; according to the number of the divisions they are termed bifid, *bifidæ*; three-clift, *trifidæ*, &c.

Forked, *furcatus*, divided.

orked Anthers, *antherae furcatae*, divided at the end, and diverging.

Fortifying, *muniens*, when the uppermost leaves, which spread out horizontally on long petioles in the day, hang down round about them, so as to form an arch, in the night.

Fortifying or Fencing round, *circumsepiens*, when, during night, leaves, which are at other times spread out horizontally, become erect, and surround the top of the stem in the form of a funnel.

Fovilla,

Fovilla, *fovilla*—see Pollen.

Four-cleft—see Cleft.

Four-leaved, *tetraphyllus*.

Four-winged, *quadrialatus*, *s. tetrapterus*.

Fragrant, *fragrans*.

Fringed—see Fimbriate.

Frond, *frons*, a perfect frond consists of a stipe passing into a leaf or leaves; but this term is likewise applied to *Lichens*, which have no stipe, but only a leafy or coriaceous part supporting the fructification.

Frondescence, *frondescentia*, the season at which plants unfold their leaves.

Frondose, *frondosus*, applied to the offspring of a prolific flower when leafy. An example of this may sometimes be observed in the anemone, &c.

Fructescence, *fructescentia*, the season when plants scatter their ripe seeds.

Fructification, *fructificatio*, a temporary part of vegetables for the purpose of generation. When perfect, it consists of seven parts, the *Calyx*, *Corol*, *Stamen*, *Pistil*, *Pericarp*, *Seed* and *Receptacle*.

Fruit, *fructus*, the seed with or without a pericarp.

Frutescent, *frutescens*, a stem is named frutescent, when from herbaceous it becomes shrubby.

Fugacious, *fugax*, *s. evanescens*, of short continuance.

Fulcrate or Fulcred, *fulcratus*, a branch is termed fulcred when supported by fulcres or props.

Fulcres, *fulcra*, props for the more convenient support of the plant. *Fulcres* include *Petiole*, *Stipule*, *Tendrill*, *Pubescece*, *Arms*, *Peduncle*, *Bracte*.

Full, *plenus*, applied to a flower when the petals are so increased, that the stamens are excluded, or become changed to petals.

Fungi, the name of the fourth order of the class Cryptogamia.

Fungous, *fungosus*.

Funnel-shaped, *infundibuliformis*; applied to a conical corol, fixed upon a tube, as in *Hounds Tongue*, *Cowslips*, &c.

Furrowed, *sulcatus*, *s. exaratus*. The trunks or leaves of plants are termed furrowed when marked with deep lines.

Fusiform, *fusiformis*, spindle shaped: applied to a root when thick, oblong, attenuated.

G

Gape, *rictus*, the opening betwixt the lips in an irregular corol.

Gaping, *hians*, a gaping corol, opposed to closed.

Gashed, *incisus s. dissectus*—see Incised.

Gem, *gemma*—see Bud.

Gemination or Budding, *gemmaio*, the construction of the bulb or bud from leaves, stipules, petioles or scales.

Gemmification, *gemmaificatio*, the formation of buds or gems.

Gemmiparous, *gemmaiparus*, producing buds.

Geniculate, *geniculatus*, knee-jointed, applied to a stem bent in an angle at the joint.

Generic, *genericus*. A generic character is the definition of the genus; it is of three kinds, *Factitious*, *Essential* and *natural*—see those terms. A generic name is applied to all the plants of the same ge-

nus,

nus, tribe, or family. The specific name is joined to this, in order to distinguish one species from every other of the same genus.. A plant is completely named when it has both a generic and a specific appellation.

Genus, *genus*, a subdivision of an order.

Germen, *germen*, the rudiment of the immature fruit in the flower.

Germination, *germinatio*, the time when the seeds, after being sown, are protruded into cotyledons or seed-lobes.

Gibbous, *Gibbus*, convex.

Gibbous Leaf, *folium gibbum*, when both surfaces are convex, from the interposition of a more copious pulp.

Gill, *lamella*. The thin plates or lamellæ, observed on the under surface of the pileus of an *Agaric*, are termed *Gills*.

Glands, *glandulæ*, small bodies excreting a fluid.

Glandless—see Eglandulous.

Glandulation, *glandulatio*.

Glass-shaped, *cyathiformis*. Applied to a tubular corol, &c. but dilated a little towards the upper part.

Globular, *globosus*, of a spherical figure. This term is likewise applied to a *Perianth*, *Corol* and *Stigma*, when approaching in form to a globe.

Globular Root, *radix globosa*, roundish with lateral radicles

Globular Head, *capitulum globosum*, round on every side—see Head.

Glomerate, *glomeratus*, crowded together.

Glomerate Spike, *spica glomerata*, consisting of spikelets variously heaped together.

Glomerule, *glomerulus*, a small roundish head of flowers.
Glossy, *nitidus*, shining.

Glossy Leaf, *folium nitidum*, with a shining smoothness.

Glume, *gluma*, the calyx of a grass with embracing valves.

Glumose, *glumosus*, having glumes.

Gluten, *gluten*, a viscous substance.

Glutinosity, *glutinositas*, the quality of a slippery fluid.

Glutinous, *glutinosus*, besmeared with slippery moisture.

Grain—see Coccum.

Gramina, one of the seven families into which the vegetable kingdom is divided by Linnæus—see Families.

Granulated, *granulatus*. A root is termed granulated, when composed of many small fleshy particles.

Granulation, or Granule, *acinus*, one of the component parts of the fruit of a *Mulberry*, &c.

Green, *viridis*.

Grossification, *grossificatio*, the season, when after florescence, the germen becomes large.

Gymnospermia, the name of the first order of the class Didynamia.

Gymnospermous, *gymnospermus*, having naked seeds.

Gynandria, the name of the twentieth class in the Linnean system.

Gynandria, is also the name of an order.

Gynandrous, *gynandrus*, having the stamen or stamens attached to the pistil.

H

Habit, *habitus*.

Habitual, *habitualis*. The habitual character is taken from the general external appearance of plants,
viz.

viz. from their placentation, radication, ramification, intortion, foliation, stipulation, pubescence, inflorescence, &c.

Hair, *capillus*, the twelfth part of a line.

Hairs, *pili*, setaceous excretory ducts of a plant.

Hair-bearing, or Hair-pointed, *pilifer* s. *piliger*. Leaves are so termed which terminate in a hair.

Halved, *dimidiatus*. A head of flowers is termed halved when round on the one side, and flat on the other. It is likewise applied to a spathe, when investing the fructification only on the inner side.

Hand, *palma*, equal to the breadth of four fingers—about three inches.

Harvest, *messis*, the season when the fruit is fully ripe.

Hastate, *hastatus*, halberd-shaped.

Hastate Leaf, *folium hastatum*, *sagittate*, with the posterior angles projecting laterally.

Hatchet-shaped, *dolabriformis*. Leaves, are termed hatchet-shaped, when compressed somewhat round, externally gibbous, the edges acute, roundish beneath.

Head, *capitulum*, several flowers collected into a globular form.

Helmet, *galea*, the upper lip of a ringent corol.

Helmetted, *galeatus*, furnished with a helmet.

Hemispherical, *hemisphæricus*, in the form of half a globe.

Heptagynia, the name of an order.

Heptandria, the seventh class in the Linnean system.

Heptandrous, *heptandrus*, having seven stamens.

Herb, *herbe*, that part of a vegetable, which arising from the root, and terminated by the fructification, includes the trunk, leaves, fulcres, and hybernacle.

Her-

Herbaceous, *herbaceus*, applied to a stem which perishes annually, as the Nettle, Pea, &c.

Hermaphrodite, *hermaphroditus*. Plants, are termed hermaphrodite, which carry flowers containing both anthers and stigmas.

Hexagynia, one of the orders in some of the classes of the Linnean system.

Hexagynous, *hexagynus*, having six pistils.

Hexandria, the sixth class in the Sexual system.

Hexandria is likewise the name of an order.

Hexandrous, *hexandrus*, having six stamens.

Hirsute, *hirsutus*, *s. hirtus*, rough-haired, shaggy.

Hispid, *hispidus*. This term is applied to a trunk, or leaf beset or sprinkled with rigid bristles.

Hooks, *hami*, *s. hamuli*, daggers with a crooked or curved point by which they readily adhere to animals.

Hooked, *hamosus*, furnished with hooks.

Hook-like, *uncinatus*.

Horizontal, *horizontalis*, applied to a root running horizontally under the earth.

Horizontal Leaf, *folium horizontali*, going off from the stem at a right angle.

Horn, or Spur, *cornu s. calcar*, the tubular part of the nectary in some flowers.

Horn-shaped, or Horned, *cornutus*, *s. corniculatus*, in the form of a small horn.

Horologe, *Horologium*; an account of the *vigils* and *times of opening and shutting of flowers*.

Husk—see Glume.

Hybernacle, *hybernaculum*, the winter-quarters or lodge, the covering by which the embryo of the future plant

plant is secured from injury during Winter—see Bulb, and Bud or Gem.

Hybrid, *hybridus*, a mule produced from two different species.

Hypocrateriform, *hypocrateriformis*, salver-shaped, applied to a corol when flat, and fixed upon a tube.

I

Icosandria, the name of the twelfth class in the Linnean system.

Icosandria is also the name of an order.

Icosandrous, *icosandrus*, having about twenty stamens inserted in the inside of the calyx.

Imbricated, *imbricatus*. A trunk, is termed imbricated, when covered so as not to appear naked in any part. This term is likewise applied to a perianth, covered with scales placed one over another.

Imbricated Leaves, *folia imbricata*, covering half of each other in turn. Leaflets are also termed imbricated, when so disposed, within the bud, as to lie crosswise on each other in their turns.

Imbricating, *imbricans*, when the common petiole is defended, during sleep, by being imbricated.

Immersed, *immersus*, growing under water—see submersed.

Impari-pinnate, *impari-pinnatum*, a pinnate leaf terminated by an odd or single leaflet.

Imperfect, *imperfectus*, applied to a flower, signifies that it wants either stamens or pistils.

Implicated, *implicatus*, *s. implexus*, matted together or entangled.

Inch, *pollex*, as long as the last joint of the thumb.

Incised

Incised, *incisus*, *s. dissectus*. An incised leaf is divided into irregular segments, but more determinate in their number than in the lacinated leaf.

Inclining, *inclinans*.

Inclosed, or **Included**, *inclusus*. Anthers, are termed inclosed, when situated within the throat of the corol.

Including, *includens*, when alternate leaves approximate the stem, during the night, so that a flower or branchlet is concealed between them.

Incomplete, *incompletus*, applied to a flower, implies that it is destitute either of the calyx or corol.

Incrassated, *incrassatus*, applied to a peduncle, implies that it increases gradually in thickness towards the extremity.

Incumbent, *incumbens*, denotes *leaning against* when applied to a filament, and *lying or resting horizontally upon*, when applied to an anther.

Incurved, *incurvatus*, *s. incurvus*, bent inwards.

Indentation, *sinus*.

Indented—see sinuated.

Indistinct, *obsoletus*, not well defined.

Indistinctly, *obsolete*.

Indusium, *indusium*, a term employed by Willdenow to express the integument, which includes the whole flower, and afterwards the fruit in the Filices, as in Adder's Tongue, Polypody, &c,

Inferior, *inferus*, *s. inferior*. A perianth, is termed inferior, when the germen is above the receptacle. The same term is applied to a germen placed beneath the corol,

Inflated

Inflated, *inflatus*. A perianth is termed inflated when hollow like a bladder.

Inflation, *inflatio*, the increased volume of the pericarp, whereby it becomes more easily moved by the air.

Inflected, *inflexus*, bent inwards. Leaves are said to be inflected when arched upwards towards the apex.

Inflorescence, *inflorescentia*, the manner in which flowers are joined to the plant by their peduncles.

Infundibuliform—see Funnel-shaped.

Inserted, *insertus*, applied to a petiole sitting perpendicularly on the branch.

Interfoliaceous, *interfoliaceus*. Interfoliaceous flowers are placed alternately with, and between the leaves.

Internode, *internodium*, the space between one joint and another.

Interrupted, *interruptus*, irregular in form. A spike is said to be interrupted when it consists of alternate distant spikelets.

Interruptedly, *interrupte*—see Pinnate.

Interwoven—see Implicated.

Involucel—see Involucret.

Involucre, *involucrum*. A calyx remote from the flower.

It is either *Universal* or *Partial*, the first is placed under the umbel, the last under the umbellets.

This term is employed by Dr. Smith, to express the cover, or receptacle of the capsules of Ferns.

The Dorsiferous Ferns have been distributed into genera from the situation of the fructifications and their aggregate figure; but as the more essential parts of their fructification are still unknown, Dr. Smith with great propriety prefers the mem-

branous involucre, as the part of most importance in determining the genera of these plants.

Involucrad, *involucratus*, furnished with an involucre.

Involucret, *involucellum*, a partial involucre.

Involute, *involutus*, rolled inwards. It is used, as a term of veneration, to signify leaves having their edges rolled in spirally, on both sides, towards the upper surface.

Involving, *involvens*, when the leaflets of a compound leaf approach during the night, by their tips only, leaving an arch underneath.

Inundated, *inundatus*, a term applied by Linnæus to any place which is overflowed only in winter.

Irregular, *irregularis*, applied to denote a corol having the parts of the Limbus differing in figure, magnitude and proportion.

Isthmus, *isthmus*, a legume is said to be intercepted with isthmuses, when divided transversely within into different cells.

Joint, *articulus*. The joint or knot is properly the articulation, although frequently employed to express the intermediate space.

Jointed, *articulatus*, applied to a trunk or root when intercepted with joints.

Jointed Leaf, *folium articulatum*, one leaf growing from the top of another. A Capsule and Silique are also termed jointed when intercepted with joints or tight knots.

Jointedly, *articulate*.

Juiceless, *exsuccus*, dry, without juice.

Juicy, *succosus*, replete with juice.

Juliform,

Juliform, *juliformis*, in the form of a catkin, or ament
(*Julus s. Amentum*.)

K

Keel, *carina*, the lowest petal of a papilionaceous corol.

Keeled Leaf, *folium carinatum*, the prone or inferior surface of the disk prominent longitudinally.

Kernel, *nucleus*, the seed included in the nut.

Knee-joint, *geniculum*.

Knee-jointed—see Geniculate.

Knob, *tuber*. A little knob, *tuberculum*—see Tubercle.

Knot, *nodus*—see Joint.

Knotty, *nodosus*, furnished with knots or joints. A legume is so termed when elevated in knots.

Knotless, *enodis*, applied to a trunk without knots or joints.

L

Labiate—see Lipped.

Labyrinth-form, *labyrinthiformis*.

Lacerated, *lacer*, ragged.

Lacinated, *laciniatus*, jagged.

Lacinated Leaf, *folium laciniatum*, cut into various indeterminate parts. The term lacinated is likewise applied to a corol when divided into segments.

Lactescent, *lactescens*, abounding in a milky juice.

Lacunose—see Pitted.

Lacustrian, *lacustre*, applied to soil (*solum*) having a firm bottom with sweet pure water.

Lamellated or Lamellous, *lamellatus*, having thin plates or gills (Lamellæ),

Lamina, *lamina*, the upper spreading part of a many-petalled corol.

Lanceolate, *lanceolatus*, spear-shaped.

Lanceolate Leaf, *folium lanceolatum*, oblong, tapering at each end.

Lanuginous—see Downy.

Large-flowered, *grandiflorus*. A flower is termed large when the corol grows to an unusual size.

Lateral, *lateralis*, applied to an anther connected by the whole side to the filament. Stipules are also termed lateral when inserted on the sides of the rising petiole.

Latticed, *cancellatus*, open like lattice-work.

Lax—see Limber.

Leaves, *folia*, the organs of motion and respiration.

Leafless, *aphyllus*, destitute of leaves.

Leaflet, *foliolum*, the partial or small leaf of a compound leaf.

Leafy, or Leaved, *foliatus*, s. *foliosus*, furnished with leaves.

Leaf-like—see Foliaceous.

Leathery—see Coriaceous.

Legume, *legumen*, a two-valved pericarp, with the seeds fixed along one suture only. The pea and most of the plants in the fourth order of the class *Diadelphia* furnish examples. It is not unusual in common language to call these leguminous plants.

Lenticular, *lenticularis*, globular, but compressed—lentil-shaped.

Leprous, *leprosus*, having a scurfy appearance.

Liber—see Bark.

Lid, *operculum*, the cover of a capsule which opens horizontally.

Lidded, *operculatus*, furnished with a lid.

Ligulate, *ligulatus*, strap-shaped.

Ligulate,

- Ligulate Corol**, *corolla ligulata*, all the corrollets of the florets flat towards the end; the base only being tubular.
- Limber or Lax**, *laxus*, applied to a trunk easily bent into a bow.
- Limbus**, *limbus*, the upper dilated part of a one-petalled corol. It is also used to express the entire border of a many-petalled corol.
- Line**, *linea*, as long as the crescent at the root of the middle finger nail. The twelfth part of an inch.
- Linear**, *linearis*, every where of an equal breadth. It is used to express a narrow leaf, the opposite margins of which are almost parallel.
- Linguiform, or Lingulate**, *linguiformis, s. lingulatus*, tongue-shaped.
- Lingulate Leaf**, *folium lingulatum*, linear, fleshy, convex underneath.
- Lip**, *labium*, is sometimes used to denote the upper, but more frequently the under division of a ringent corol. The deadnettle, and the greatest number of the plants in the Class Didynamia furnish examples.
- Lipped**, *labiatus*, a perianth is termed lipped, when the segments are irregular and formed into two lips.
- Lobe**, *lobus*. The parts into which some simple leaves are divided, are termed lobes.
- Lobed Leaf**, *folium lobatum*, divided down to the middle into distinct parts, with convex margins. Two-lobed, *bilobum*, three-lobed, *trilobum*, &c.
- Locust**, *locusta*, the calyx of grasses. See Glume.
- Long**, *longus*, applied to a petiole when longer than the leaf. The same term is applied to stipules when longer

longer than the petiole. A perianth is likewise termed long, when longer than the tube of the corol.

Loose, *laxus*—see Limber.

Lucid, *lucidus*. A leaf is termed lucid, when bright as if illumined.

Lunate, or Lunulate—see Crescent-shaped.

Lyrate, *lyratus*, harp-shaped. Leaves are so termed when divided transversely into segments, of which the lower ones are smaller, and more distant from each other.

M

Male, *mas s. masculus*, the flowers containing anthers only.

Manifold, *multiplax*—see Many-rayed.

Many-capsuled, *multicapsularis*—see Capsuled.

Many-cleft, *multifidus*—see Cleft.

Many-flowered, *multiflorus*.

Many-leaved, *polyphyllus*.

Many-partible, *multipartibilis*.

Many-parted, *multipartitus*—see Parted.

Many-petalled, *polypetalus*.

Many-podded, *multisiliquosus*.

Many-rayed, *multiplax*.

Many-spiked, *polystachios*.

Many-valved, *multivalvis*, consisting of more than two scales.

Margin, *margo*, the edge of a leaf, &c.

Marginal, *marginalis*, placed on the margin.

Marginate, *marginatus*, bordered.

Maritime, *maritimum*, applied to soil when the bottom is covered with salt water.

Marrow

Marrow—see Pith.

Marshy, *palustris*. Soil is termed marshy when composed of muddy loose ground, covered with stagnant water in the Winter.

Maturation, *maturatio*, the time when the fruit ceases to grow, and begins to ripen.

Meadowy, *pratensis*. This term is applied to low land, abounding in herbage.

Meal, *farina*.

Mealy, *farinaceus*, *s. farinosus*.

Measure, *mensura*, used to express the size of any particular parts of plants: this is either done by mentioning the proportion which those parts bear to others, or by referring them to certain standards of measure, as a line, an inch, &c.

Membraned, *membranatus*, flatted like a leaf.

Membranous, *membranaceus*, applied to a trunk, or petiole flatted like a leaf. Leaves are likewise termed membranous, when little or no pulpy substance is interposed between their surfaces.

Menstrual, *menstruus*, applied to a flower continuing only a month.

Method, *methodus*, is a mode of arrangement, founded on many circumstances of resemblance in the objects of it.

Middle-sized, *medius*, *s. mediocris*, applied to a petiole when as long as the leaf.

Milky, *lacteus*, *s. lactifluus*—see Lactescent.

Minute, *minutus*, *s. exilis*.

Monadelphia, the name of the sixteenth Class in the system of Linnæus.

Monadelphia, is also the name of an Order.

Monadelphous, *monadelphus*, having the filaments united into a tube.

Monandria, the name of the first Class in the Linnæan System.

Monandrous, *monandrus*, having only one stamen.

Monocotyledonous, *monocotyledones*, plants which have only one cotyledon.

Monœcia, the name of the twenty-first Class in the Linnæan System.

Monœcia, is also the name of the first Order of the Class Polygamia.

Monogamia, the name of one of the Orders of the Class Syngenesia.

Monogynia, the name of an Order in several classes.

Monoicous, *monoicus*, having male and female flowers on the same individual.

Monopetalous—see One-petalled.

Monophyllous—see One-leaved.

Monospermous—see One-seeded.

Mountainous, *montanus*. This term is applied to soils, which are dry, elevated, gravelly, and barren.

Mouth, *os*, the opening in the tube of a corol, as in *Borage*, *Deadnettle*, &c.

Mucronate, *mucronatus*, dagger-shaped. A leaf is termed mucronate, when terminating in a projected dagger-point.

Mule—see Hybrid.

Multangular—see Many-angled.

Multicapsular—see Many-capsuled.

Multiplied, *multiplicatus*, luxuriant. This term is applied to a corol enlarged by a double, treble, &c. series of petals, the stamens remaining.

Muricated,

Muricated, *muricatus*, applied to a trunk having its surface sprinkled with subulate points.

Musci, the name of the second order in the Class Cryptogamia.

Mutilated, *mutilatus*, deficient, applied to a flower not producing a corol, but nevertheless, perfecting the fruit and seeds. A filament is likewise termed mutilated when part of it is wanting, (the rudiment only being present.)

Nail, *unguis*, as long as the nail, about half an inch.

Naked, *nudus*, destitute of clothing. A verticil is termed naked, when destitute of an involucre, or bracte.

Naked Leaf, *folium nudum*, without hairs or bristles.

Naked Head, *capitulum nudum*, without leaves or bristles.

Naked Corol, *corolla nuda*, neither stopped by hairs nor valves.

Naked Anther, *anthera nuda*, neither covered by a scale, nor inclosed within the throat of the corol.

Naked Receptacle, *receptaculum nudum*, neither dotted, hairy, nor chaffy. A cyme is also termed naked, when destitute of bractes.

Narrowed, *angustatus*, s. *coarctatus*. This term is applied to a corol when the throat is more contracted than the tube.

Narrow-leaved, *angustifolius*.

Nations, *gentes*. Linnæus has divided vegetables into nine nations, viz. *Palmæ*, *Gramina*, *Lilia*, *Herbæ*, *Arbores*, *Filices*, *Musci*, *Algæ*, and *Fungi*. This arrangement differs from the distribution of vegetables into families, merely in this circumstance, that the *Lilia Herbæ*, and *Arbores* of the former, are included in the *Plantæ* of the latter. See Families.

Natura

Natural, *naturalis*. The *Natural Character* of a genus, is that, which exhibits all the certain distinctive marks of the fructification, and may therefore be employed under any arrangement. The characters given by Linnæus in the *Genera Plantarum*, are of this kind, and are derived from the number, figure, situation, and proportion of the stamens, and other parts of the fructification, rejecting taste, smell, colour and size, as less essential, and subject to variation from soil, climate, &c.

Navel, *umbilicus*—see Eye.

Navicular—see Boat-shaped.

Neck, *collum*, the upper narrow part of the tube in a monopetalous corol.

Nectariferous, *nectarifer*.

Nectarine, *nectarinus*. Filaments are termed nectarine, which are situated on the nectary.

Nectary, *nectarium*, the honey-bearing part proper to the flower.

Nerve, *nervus*, a simple unbranched vessel.

Nerved Leaf, *folium nervosum*, with very simple vessels running from the base to the apex.

Nerveless, *enervis*, without nerves.

Neutral or Neuter, *neuter*, having neither anther, nor stigma.

Nidulant, *nidulans*. Seeds dispersed through the pulp of a berry are styled nidulant.

Nodding, *nutans*, applied to a trunk, or peduncle reflected outwards to the top.

Notch, *incisura*.

Nucament, the same with Ament.

Nucleus—see Kernel.

Nuptials,

Nuptials, *nuptiæ*, *s. sponsalia*, the inter-marriages of plants, with their re-production.

Nut, *nux*, a seed covered with a bony cuticle. It comprehends the seeds of stone-fruits, as well as what are usually called nuts.

O

Obconical, *obconicus*, inversely conical.

Obcordate, *obcordatus*. This term is applied to a capsule when inversely cordate, or heart-shaped.

Oblique, *obliquus*, applied to a trunk neither in a perpendicular, nor horizontal line.

Oblique Leaf, *folium obliquum*, looking towards the sky with the base, towards the horizon with the apex, as in Fritillary. A calyptré, *calyptra*, is also termed oblique, when bent on one side.

Oblong, *oblongus*. A leaf is termed oblong when the longitudinal diameter is several times greater than the transverse.

Obovate, *obovatus*, inversely ovate.

Obsolete—see Indistinct.

Obtuse, *obtusus*. A leaf is termed obtuse when its apex terminates within the segment of a circle.

Obverse, *obversus*, *s. verticalis*, having the base narrower than the apex, so that they appear to occupy the places of each other.

Obvolute, *obvoluta*, a term of veneration, expressive of leaves having the upper surface with the sides approximated, so that one side separates the sides of the other leaf. (The margins alternately embracing the straight margin of the opposite leaf.)

Octandria, the eighth Class in the Linnæan System.

Octandria, is also the name of Order.

Octandrous,

Octandrous, *octandrus*, having eight stamens.

Odour, *odor*, affecting the organ of smell.

One-celled, *unilocularis*—see Cell.

One-flowered, *uniflorus*.

One-flowered Glume, *gluma uniflora*, comprehending one flower. Two-flowered *biflora*. Three-flowered *triflora*. Many-flowered, *multiflora*, including many flowers.

One-leaved, *monophyllum*.

One-leaved Perianth, *perianthium monophyllum*, consisting of one leaf only. Two-leaved, *diphyllum*. Three-leaved, *triphyllum*, &c. &c. according to the number of leaves. Many-leaved *polyphyllum*, consisting of many leaves.

One-petalled, *monopetalus*.

One-petalled Corol, *corolla monopetala*, consisting of one petal. Two-petalled, or Dipetalous, *dipetala*, &c. &c. according to the number of petals. Many-petalled, or Polypetalous, *polypetala*, consisting of many-petals.

One-rowed, *secundus*, applied to a raceme when all the flowers are turned to one side.

One-sided, or Unilateral, *unilateralis*, applied to a raceme with all the flowers inserted on one-side.

One-valved, *univalvis*.

One-valved Glume, *gluma univalvis*, consisting of one scale. Two-valved, *bivalvis*, consisting of two scales. Many-valved, *multivalvis*, consisting of more than two scales.

One-valved Spathe, *spatha univalvis*, opening on one side,

side. Two-valved, *bivalvis*, opening on two sides.

Opening or standing open, *dehiscens*.

Opening horizontally—see Gut round.

Operculate—see Lidded.

Opposite, *oppositus*.

Opposite Branches, *rami oppositi*, placed in a decussated manner in pairs.

Opposite Leaves, *folia opposita*, placed in pairs crosswise.

Oppositifolious, *oppositifoliæ*, applied to stipules placed opposite to the leaf.

Orange-colour, *aurantius*.

Orbicular, *orbicularis*, s. *orbiculatus*, round.

Orbicular Leaf, *folium orbiculatum*, the circumference circular.

Order, *ordo*. A subdivision of a Class.

Oval, *ovalis*, of a round and longish figure.

Oval Leaf, *folium ovale*, from a circle becoming oblong, both extremities being rounded and equal.

Ovary, *ovarium*, the germen or rudiment of the fruit.

Ovate, *ovatus*, egg-shaped.

Ovate Leaf, *folium ovatum*, the longitudinal diameter exceeding the transverse; the base a segment of a circle, and the point narrower.

Ovule, *ovum*, the vegetable egg contained within the ovary, and which requires the assistance of the male sperm to become a true seed.

P

Pair, *jugum*, applied to the leaflets of pinnate leaves. See Bijugous and Two-paired.

Prais,

Pairs, *geminæ*, applied to stipules, proceeding in pairs from the same point.

Palate, *palatum*, a prominency in the throat of a ringen; or personate corol; or a process of the lower lip, extending towards the upper, and closing the gape or opening.

Paleaceous—see Chaff or Chaffy.

Palmæ. The sixth family in the arrangement of vegetables, by Linnæus. In his Artificial System they constitute an Appendix.

Palmate, *palmatus*, hand-shaped.

Palmate Root, *radix palmata*, fleshy, lobed.

Palmate Leaf, *folium palmatum*, divided beyond the middle into nearly equal lobes.

Panduriform, *panduriformis*, violin-shaped.

Panduriform Leaf, *folium panduriforme*, oblong, broader below, contracted at the sides.

Panicle, *panicula*, scattered flowers on differently divided peduncles.

Panicked, *paniculatus*, applied to a trunk, the branches of which are variously subdivided.

Papilionaceous, *papilionaceus*, butterfly-shaped.

Papilionaceous Corol, *corolla papilionacea*, irregular, consisting of a keel, standard, and wings.

Papillous—see Pimpled.

Pappus, *pappus*, a feathery or hairy crown.

Papulous, *papulosus*, full of little pimples.

Papulous Leaf, *folium papulosum*, covered with little blisters, or vesicular points.

Parabolic, *parabolicus*, resembling a parabola.

Parabolic Leaf, *folium parabolicum*, gradually narrower towards

towards the apex, and rounded.

Parallel Dissepiment, *dissepimentum parallelum*, approaching the valves by its breadth and transverse diameter; placed in the same direction with the valves.

Parasitical, *parasiticus*, growing on some other plant.

Parched, *aridus*, dry.

Parted, *partitus*, divided.

Parted Leaf, *folium partitum*, divided almost to the base.

Two-parted, *bipartitum*. Three-parted, *tripartitum*. Four-parted, *quadripartitum*. Five-parted, *quinquepartitum*.

Partial, *partialis*, expressive of a part, not of the whole.

Partial Peduncle, *pedunculus partialis*, a fulcre supporting the fructification.

Partial Umbel, *umbella partialis*, part of an universal umbel.

Partial Involucre, *involucrum partiale*, placed beneath a partial umbel.

Partition—see Dissepiment.

Patulous, *patulus*, *s. patens*, the same as spreading.

Pear-shaped—see Pyriform.

Pectinate, *pectinatus*, *s. pectiniformis*, Comb-like.

Pedate, *pedatus*, resembling the foot of a bird.

Pedate Leaf, *folium pedatum*, the petiole bifid, and connecting several leaflets at the sides.

Pedatifid, *pedatifidus*, differs in the same degree from pedate, as pinnatifid does from pinnate, the parts of the leaf not being separated to the rib.

Pedicel, *pedicellus*, proper to each of the flowers on the common peduncle.

Pedicelled,

Pedicelled, *pedicellatum*, applied to a germen or legume standing or elevated on a pedicel.

Peduncle, *pedunculus*, a fulcre supporting the fructification.

Peduncled Flowers, *flores pedunculati*, furnished with peduncles.

Peduncled Verticil, *verticillus pedunculatus*, with peduncles elevating the flowers.

Peduncular, *peduncularis*, applied to a tendril situated on the peduncle.

Peltate, *peltatus*, target-shaped.

Peltate Leaf, *folium peltatum*, with a petiole inserted in the disk of the leaf.

Pellucid, *pellucidus*—see Diaphanous.

Pencil-form, *penicilliformis*. Stigmas, &c. are termed pencil-shaped when like a hair pencil.

Pendulous, *pendulus*, hanging down, applied to a peduncle when loose, so as tend downwards with its leaf.

Pennate, *pennatus*. A pennate shoot of a moss is one, which has alternate or opposite leaflets attached on both sides to the rachis, or mid-rib.

Pentacoccous—see Five-grained.

Pentagonal—see Five cornered.

Pentagynia, the name of one of the Orders in the fifth, and several other Classes in the Linnæan system.

Pentagynous, *pentagynus*, having five pistils.

Pentandria, the name of the fifth Class in the Sexual system.

Pentandria, is also the name of an Order.

Pentandrous, *pentandrus*, having five stamens.

Pentapetalous—see Five-petalled.

Pentaphyllous

Pentaphyllous—see Five-leaved.

Perennial, *perennis*, applied to a root continuing more than two years.

Perennial Leaf, *folium perenne*, flourishing during several years.

Perfect, *perfectus*, having both stamen and pistil.

Perfoliate Leaf, *folium perfoliatum*, surrounding the stem transversely with its base, and not gaping before.

Perianth, *perianthium*, a calyx contiguous to the fructification.

Perianth of the Fructification, *perianthium fructificationis*, including the stamens and germen.

Perianth of the Flower, *perianthium floris*, containing the stamens but not the germen.

Perianth of the Fruit, *perianthium fructus*, containing the germen without the stamens.

Pericarp, *pericarpium*, an organ of the plant filled with seeds, and scattering them when ripe.

Perichæcium, *perichæcium*, the calyx or involucre surrounding the flowers, and the fruit-stalk, or capsule of the mosses.

Perigonium. This term is employed by Hedwig in preference to that of calyx and corol, because when the stamens and pistils have only one covering, or where there are more than two, it is impossible to determine which is a calyx, and which is a corol. When there are two coverings, he terms one the *internal*, the other the *external* perigonium, and when there are three, he names the third the *intermediate* perigonium. Perigynanda is used in the same way by Necker, as Perigonium by Hedwig.

Peristome, *peristoma*, the apparatus observed at the mouth of the case, in mosses, when the lid falls off.

Permanent—see Persisting.

Perpendicular, *perpendicularis*, applied to a root, descending nearly in a right line.

Perpetual, *perpetuus*, remaining unchanged.

Persisting, *persistens*, permanent.

Persisting Leaf, *folium persistens*, not falling off at the end of one Summer. Stipules are termed persisting, when they remain after defoliation. The same term is also applied to a Perianth, a Corol, a Style, and a Stigma which remain till the fruit be mature.

Personate Corol, *corolla personata*, ringent but with the palate closed.

Pertused, *pertusus*—see Punched.

Pervious, *pervius*, open. A corol, is termed pervious, when not closed.

Petal, *petalum*, is the same as a corol in a monopetalous flower. In a two, three, or many-petalled flower, it is one of the parts into which the corol is divided.

Petalled—see One-petalled, &c.

Petaliform, *petaliformis*, resembling a petal.

Petaline, *petalinus*. This term is applied to a Nectary inserted in the petals.

Petal-less—see Apetalous.

Petaloid, *petaloideus*, having the form of a petal.

Petiole, *petiolus*, a fulcre supporting a leaf.

Petiolar Tendril, *cirrhus petiolaris*, placed on the petioles.

Petiolar Bud, *gemma petiolaris*, consisting of petioles at its origin.

Petiolate

Petiolate Leaf, *folium petiolatum*, with a petiole inserted in the base.

Petiolule, *petiolulus*, a partial petiole.

Phyllophorous, *phyllophorus*, leaf-bearing.

Pileate, *pileatus*, having a pileus.

Pileus, the upper expanding part of a fungus supporting the fructifications.

Pimpled Leaf, *folium papillosum*, covered with fleshy points.

Pinna, the segment, leaflet, or division of a compound leaf.

Pinnate Leaf, *folium pinnatum*, the petiole simple, connecting several leaflets at the side. Two-paired, *bijugum*. Three-paired, *trijugum*. Four-paired, *quadrijugum*, &c. with four, six, eight leaflets—see Pair.

Pinnate with an odd one, *pinnatum cum impari*, terminated by a single odd leaf.

Pinnate abruptly, *abrupte*, neither terminated by a leaflet, nor a tendril.

Pinnate tendrilled, *cirrhosum*, terminated by a tendril.

Pinnate oppositely, *foliolis oppositis*, the leaflets opposite.

Pinnate alternately, *foliolis alternis*, the leaflets placed alternately.

Pinnate interruptedly, *foliolis interruptis*, having the alternate leaflets smaller.

Pinnate decursively, *foliolis decursivis*, having the leaflets running down the petiole.

Pinnate jointedly, *articulate*, the common petiole being jointed.

Pinnatifid Leaf, *folium pinnatifidum* divided transversely into horizontal, oblong segments, which do not quite reach the mid-rib.

Pinnulate, *pinnulatus*, when each pinna is subdivided.

Pinnule, *pinnula*, the subdivision of a pinna.

Pistil, *pistillum*, an organ adhering to the fruit for the reception of the pollen.

Pistillaceous, *pistillaceus*. This term is applied to a necessary, when inserted in the germen.

Pistil-bearing, or Pistilliferous, *pistillifer*.

Pith, *medulla*, the innermost vesicular substance of the trunk or branch. This part is not supposed to be so important by some writers as by Linnæus. Dr. Darwin, however, considers the pith to be the first or most essential rudiment of the new plant, like the brain or spinal-marrow, which is, perhaps, the first visible part of the figure of every animal fetus, from the tadpole to man.

Pithy, *inanis*, applied to a trunk spongy within.

Pitted Leaf, *folium lacunosum*, having the disk depressed between the veins.

Placentation, *placentatio*, the disposition of the cotyledons, during the germination of the seeds.

Plaited, *plicatus*, folded in plaits.

Plaited Leaf, *folium plicatum*, having the disk alternately bent in acute folds. Plaited is also employed, as a term of veneration, to express the leaf, within the bud, being folded into various plaits.

Plumose—see Feathery.

Plumule, *plumula*, the scaly ascending part of the corcle. See Corcle.

Poisonous, *virosus*.

Pollen, *pollen*, the powder of the anther, bursting by moisture, and throwing off elastic atoms: it is too minute for the naked eye to examine, but by
the

the assistance of a microscope, it appears very different in different plants: thus in the *Sunflower*, it is an echinated globe; in *Geranium* perforated; in *Comfrey* didymous; in *Marshmallow* rotate and dentate; in *Violet* angular; in *Narcissus* reniform; and in *Borage* like a roll of parchment.

Polyadelphia, the name of the eighteenth Class of the Linnæan system.

Polyadelphous, *polyadelphus*, having the filaments united into more than two sets.

Polyandria, the name of the thirteenth Class of the Linnæan system.

Polyandria, is also the name of an Order.

Polyandrous, *polyandrus*, having many stamens inserted in the receptacle.

Polycotyledonous, *polycotyledones*, plants having more than two cotyledons.

Polygamia, the name of the twenty-third Class in the system of *Linnæus*.

Polygamia, is also the name of several Orders in the Class Syngenesia.

Polygamous, *polygamus*, a plant which has hermaphrodite, and either male or female flowers, or both.

Polygynia, the name of an Order in several of the Classes of the Linnæan system.

Polygynous, *polygynus*, many-pistilled.

Pome, *pomun*, a stuffed valveless pericarp, containing a capsule.

Pores, *pori*, the extremities of the tubes in some of the Fungi.

Porule, *poruli*, little pores.

Powdery,

Powdery, *pulveratus*, *s. pulverulentus*.

Premorse Root, *radix præmorsa*, appearing as if bitten off at the end.

Premorse Leaf, *folium præmorsum*, terminated obtusely with unequal notches.

Prickles, *aculei*, pricking daggers, affixed only to the bark of the plant.

Prickly, *aculeatus*, armed with prickles.

Prickly-pointed—see Cuspidate.

Prismatic or Prism-shaped, *prismaticus*, of the same thickness throughout, with several flat sides.

Procumbent, *procumbens*, applied to a stem, feeble, leaning upon the earth.

Projecting, *exsertus*. An anther is termed projecting when not included in the corol.

Proliferous stem, *caulis prolifer*, putting forth branches only from the centre of the top.

Proliferous Umbel, *umbella prolifera*, more than decom-pound. A flower is termed proliferous when one rises within another.

Prominent, *prominens*, projecting.

Prominulous, *prominulus*, somewhat prominent.

Prone, *pronus*—see Disk.

Prop—see Fulcre.

Propago, *propago*, the decorticated seed of a moss.

Proper Perianth, *perianthium proprium*, belonging to a single flower.

Proper Involucre, *involucrum proprium*; placed beneath each flower.

Proper Nectary, *nectarium proprium*, distinct from the petals and other parts.

Proper

Proper Receptacle, *receptaculum proprium*, sustaining only the parts of one fructification.

Prostrate, *prostratus*, erect with a procumbent stem.

Protruded—see Projecting.

Protuberant—see Torose.

Pubescence, *pubes*, every kind of hairiness on plants.

Pubescent, *pubescens*, applied to a style covered with soft wool or hair.

Pulpy Leaf, *folium pulposum*, filled with a tenacious matter.

Pulpy Legume, *legumen pulposum*, filled with a pulpy substance.

Punched, *pertusus*, having hollow dots all over the surface.

Punctate, *punctatus*—see Dotted.

Pungent, *pungens*, sharp.

Purple, *purpureus*.

Purse-like Nectary, *nectarium scrotiforme*, somewhat globular, with a depressed line in the middle. A Capsule, is also termed purse-like, when elevated with two protuberances.

Pustular, *pustulosus*, covered with vesicular dots.

Putamen, the shell of a nut, or stone fruit.

Pyriform, *pyriformis*, pear-shaped.

Q

Quadrangular, *quadrangularis*, having four prominent angles.

Quadricapsular—see Four-capsuled, &c. &c.

Quinate, *quinatus*, having five leaflets on a petiole.

Quinquefid—see Five-cleft, &c.

R

Raceme, *racemus*, a peduncle furnished with lateral branches.

Rachis, *rachis*, the mid-rib of a leaf; or the filiform receptacle,

ceptacle, connecting the florets longitudinally so as to form a spike.

Radiate Corol, *corolla radiata*, the corollets of different forms, viz. of the disk tubular, of the circumference, ligulate.

Radiate Stigma, *stigma radiatum*, marked with striated rays diverging from the centre.

Radical, *radicalis*, arising immediately from the root. See Root-leaf.

Radicant, *radicans*, striking root.

Radication, *radicatio*, the disposition of the root.

Radicle, *radicula*, the fibre of a root. See Corcle.

Rameous, *rameus*, belonging to a branch. See Branch.

Ray, *radius*, the circumference of a compound, or aggregate flower, or the spoke of an umbel.

Rayed, *radiatus*. A syngenesious flower is termed *rayed*, or *radiate*, when the florets of the centre are tubular and regular, and those of the circumference ligulate, or naked, or if tubular, different from the tubular ones of the centre in size and form.

Raylet, *radiolus*, the small ray of an umbellet.

Ragged Leaf, *folium lacerum*, variously divided on the margin, the segments of different shapes.

Receptacle, *receptaculum*, the base which connects the parts of fructification.

Receptacle of the Fructification, *receptaculum fructificationis*, common to the flower and fruit.

Receptacle of the flower, *receptaculum floris*, the base on which the parts of the flower are fixed, without the germen.

Receptacle of the Fruit, *receptaculum fructus*, the base of the fruit, remote from the receptacle of the flower.

Receptacular

- Receptacular Nectary, *nectarium receptaculare*, attached to the receptacle.
- Receptacular Filament, *filamentum receptaculaceum*, inserted in the receptacle.
- Reciprocal, *reciprocus*.
- Reclining, *reclinans*, bending downwards.
- Reclined Leaf, *folium reclinatum*, bent downwards, so that the arch is lower than the base, and the apex ascending.
- Rectembryous, *rectembryus*, having a straight embryo.
- Recurved Leaf, *folium recurvatum*, bent down so that the bow or convexity is upwards.
- Red, *ruber*.
- Reflected Branch, *ramus reflexus*, hanging down perpendicularly.
- Reflected Perianth, *perianthium reflexum*, the parts or segments bent backwards.
- Refracted, *refractus*, bent back as if broken.
- Regular, *regularis*, applied to a corol, equal in the figure, magnitude and proportion of the parts.
- Remote, *remotus*, far asunder. Leaves are termed remote when distant from each other.
- Reniform, *reniformis*, kidney-shaped.
- Reniform Leaf, *folium reniforme*, roundish, hollowed out at the base, and without any posterior angles.
- Repand, *repandus*, serpentine.
- Repand Leaf, *folium repandum*, having a flexuose but flat margin.
- Resupinate, *resupinatus*, horizontally, turned upside down.
- Resupinate Leaf, *folium resupinatum*, the upper-surface becoming the lower, and the contrary.
- Resupinate Corol, *corolla resupinatum* reversed, the upper

lip of the corol facing the earth, and the lower lip the sky. Or when that which is usually the upper lip, becomes the lower.

Reticulated, *reticulatus*, like net-work.

Retroflected Branch, *ramus retroflexus*, bent in different directions.

Retrofracted Peduncle, *pedunculus retrofractus*, appearing as if brought to hang down by force.

Retuse Leaf, *folium retusum*, terminated by an obtuse indentation.

Reversed—see Resipinate.

Revolute Leaf, *folium revolutum*, bent spirally.

Revolute Tendril, *cirrhus revolutus*, the spiral line, after having made half a revolution, turned back in a contrary direction. Revolute, is also used as a term of veneration, and applied to leaves, within the bud, having the edges rolled in spirally on both sides, towards the under surface.

Rhombed, *rhombeus*, rhomb (or diamond)-shaped.

Rhombed Leaf, *folium rhombeum*, in the form of a rhomb.

Rhomboidal, *rhomboideus*.

Rib, *costa*, the petiole continued through the middle of a leaf.

Ribbed, *costatus*, having longitudinal ridges.

Rigid, *rigidus*, inflexible; not easily bending: opposed to limber and flexible.

Rigid Trunk, *caulis rigidus*, inflexible.

Rigid Leaf, *folium rigidum*, not bearing to be bent.

Rimose—see Chinky.

Ring, *annulus*, the remains of the curtain of an agaric attached to the stalk, and a circular belt in the capsule of a moss.

Ringed,

Ringed, *annulatus*, furnished with a ring.

Ringent, *ringens*, applied to a corol when irregular, gaping with two lips.

Ringless, *annulo destitutus*, without a ring.

Rod-like Stem, *caulis virgatus*, the branchlets weak and unequal.

Root, *radix*, an organ nourishing the plant. A root is composed of pith, wood, outer and inner bark. It consists of the *caudex* or body, and the *radicles* or fibres. According to Linnæus the leaves, and fructifications, are the only parts of a plant not comprehended by the term root.

Rooting Stem, *caulis radicans*, fixing itself by deep lateral roots. The term rooting is also applied to a leaf striking root.

Rooted, *radicatus*.

Root Leaf, *folium radicale*, attached to the root.

Rootlet—see Radicle.

Rosaceous Corol, *corolla rosacea*, rose-like, the petals concave, and disposed in a ring.

Rose-colour, or rosy, *roseus*.

Rostel, *rostellum*, the simple descending part of the corcle.

Rostrate—see Beaked.

Rotate, *rotatus* wheel-shaped.

Rotate Corol, *corolla rotata*, flat, without a tube.

Rough, *asper*, s. *scaber*.

Rough Stem, *caulis scaber*, rough with projecting, and rather rigid points.

Rough Leaf, *folium scabrum*, covered with prominent and rather rigid points.

Roughish, *subscaber*, somewhat rough.

Roughness, *scabrities*.

Rough-haired, *hirtus*.

Rounded Leaf, *folium rotundatum*, without angles.

Roundish Leaf, *folium subrotundum*, almost orbicular.

Roundish Head, *capitulum subrotundum*, almost globular.

Rubbishy soil, *solum rudemale*, near houses, in public roads and streets.

Rugose—see Wrinkled.

Runcinate Leaf, *folium runcinatum*, pinnatifid, so that the lobes which are convex forwards, are transverse, or concave behind, as in the *Dandelion*.

Runner, *flagellum repens*, a shoot putting forth roots and leaves at the extremity, and thus propagating the plant, as in the *Strawberry*.

S.

Sagittate, *sagittatus*, arrow-shaped.

Sagittate Leaf, *folium sagittatum*, triangular with posterior acute angles, and an indentation at the base.

Saline soil, *solum salsum*, clayey land impregnated with salt.

Salver-shaped—see Hypocrateriform.

Sarmentous, *sarmentosus*, applied to a filiform stem, the joints striking root. It seems to be in shrubs what the runner is in herbaceous plants. See Runner.

Sattiny—see Silky Leaf.

Scales, *squamæ*, foliaceous appendages to fruits.

Scaly, *squamatus*, s. *squamosus*, applied to a bulb, with imbricated scales. A stem is likewise termed scaly when sprinkled with scales.

Scandent—see Climbing.

- Scape**, *scapus*, a trunk elevating the fructification, but not the leaves.
- Scariose Leaf**, *folium scariosum*, substance dry, parched, and sounding when touched.
- Scattered Branches**, *rami sparsi*, going off in no determinate order. Leaves are likewise termed scattered when disposed in an irregular manner.
- Scobiform Seed**, *semen scobiforme*, resembling saw-dust.
- Scyphiferous**—see Cup-bearing.
- Scurfy**—see Branny.
- Seed**, *semen*, the rudiment of the new-plant.
- Seed-coat**—see Aril.
- Seed-leaf**, *folium seminale*, formerly the cotyledon, and the first leaf which appears.
- Segment**, *lacinia*, *s. segmentum*.
- Semi-columnar**, *semiteres*, half-cylindrical, applied to a stem or petiole flat on one side, roundish on the other.
- Seminal**—see Seed leaf.
- Semination**, *seminatio*, the dispersion of the mature seeds on the earth.
- Sensitive**, *sensilis*, applied to a plant changing the situation of its parts, when touched.
- Serrated Leaf**, *folium serratum*, all the incisions in the margin looking towards the extremity. Doubly serrated, *duplicato serratum*, &c.
- Serrulated**, *serrulatus*, minutely serrated.
- Sessile Leaf**, *folium sessile*, sitting immediately on the stem without a petiole.
- Sessile verticil**, *verticillus sessilis*, without evident pedicels.
- Setaceous**, *setaceus*, bristle-shaped.

Sex, *sexus*. Plants are distinguished by the sex of their flowers, which are either male, female, or hermaphrodite.

Shady Soil, *solum nemorosum*, at the base of mountains, in places covered with a spongy soil, shaded, moist, inaccessible to winds.

Sheath, *vagina*, *s. vaginula*, a membrane investing a stem, branch, or peduncle.

Sheathed, *vaginatus*, furnished with a sheath.

Sheathing, *vaginans*, applied to a leaf, the base forming a tube, and clothing the stem.

Shield, *scutellum*, an orbicular concave fructification with an elevated margin, found on some *Lichens*.
See Target.

Shining—see Glossy.

Shoot, *surculus*, a little branch or twig. It is used by Linnæus to express the branchlets of mosses.

Shorey Soil, *solum littorale*, sand with a saline impregnation.

Short, *brevis*, applied to a petiole, not so long as the leaf.

Shrivelling, *marcescens s. tabescens*, applied to a corol persisting, but in a withered state. A Stigma is likewise termed shrivelling when remaining, but in a withered state.

Shrub, *frutex*, has several woody stems, is lower and more slender than, and divides nearer the root.

Shrubby, *fruticosus*, applied to a stem somewhat woody and perennial, with many stocks.

Sickle-shaped, *falcatus*. A legume is termed falcate or sickle-shaped, when compressed, subulate, curved.

Side-flowered, *lateriflorus*, proceeding from one side of the stem,

Silicle,

Silicle, *silicula*, a roundish pericarp composed of two valves, with the seed fixed to both sutures, and furnished with a style, which is often longer than the silicle.

Siliculosa, the name of the first Order of the fifteenth class in the Linnæan system.

Siliqua, *siliqua*, a long two-valved pericarp, with the seeds attached to both sutures, and having only a very short style.

Siliquosa, the name of the second Order of the class Tetradynamia.

Silky Leaf, *folium sericeum*, covered with very soft appressed hairs.

Simple, *simplex*, undivided.

Simple Stem, *caulis simplex*, extended in a continued series towards the apex.

Simple Umbel, *umbella simplex*, all the peduncles from one and the same receptacle.

Simple Corymb, *corymbus simplex*, when each flower is furnished with its proper peduncle.

Simple Fructification, *fructificatio simplex*, consisting of few flowers.

Single Flower, *flos unicus*, the plant only producing one flower.

Single Anther, *anthera unica*, one on each filament. One common to three filaments. One on five filaments.

Sinuated, *sinuatus*, indented.

Sinuated Leaf, *folium sinuatum*, having wide indentations on the sides.

Sleep, *somnus*, the different form and appearance assumed by plants during the night, independently of their fructification. It is particularly conspicuous in the leaves.

Slender, *tenuis*, applied to a style when small in proportion to the stamens.

Slender-leaved, *tenuifolius*. This term is applied to broad-leaved plants when cut into segments, and narrow leaves.

Smooth, *glaber*, applied to a stem with a slippery or polished surface.

Smooth Leaf, *folium glabrum*, with a slippery surface.

Soft hairs, *villi*, soft close hairs like the pile on velvet.

Soil, *solum*. Land considered as the basis of vegetation, is termed soil. Soils are formed by different combinations of two or more of the four following primitive earths, viz. the *argillaceous*, the *calcareous*, the *siliceous*, and the *magnesian*. Iron also, when it exists in the state of a calx or oxyd, frequently enters into the composition of soils.

Argill (Alumine) is that part of clay to which the property of feeling soft and unctuous, and of hardening in the fire, is owing. It dissolves with difficulty in acids, and scarcely ever effervesces with them. When combined with the sulphuric acid it forms alum.

Calcareous Earths comprehend not only *chalk* (carbonate of lime) but all stones that burn to lime.

Siliceous Earth (*silex*) is often found in a stony form, such as flint or quartz; and still more frequently in that of a very fine sand. It does not effervesce with, nor is it soluble in any of the common acids.

Magnesia is never found alone; its distinguishing character consists in affording a bitter salt, termed *Epsom salt*, when combined with the sulphuric acid.

The

The soils most frequently met with are *Clay*, *Chalk*, *Sand*, and *Gravel*, *Clayey Loam*, *Chalky Loam*, *Ferruginous Loam*, *Boggy Soil*, and *Heathy or Mountain Soil*.

Clay is of various colours, white, grey, brownish red, brownish black, yellow, or bluish; it feels smooth and somewhat unctuous; when moist, it adheres to the fingers, and becomes ductile; when dry, it adheres more or less to the tongue; when thrown into water, it gradually diffuses itself through this fluid, and separates slowly from it. It does not usually effervesce with acids, unless a strong heat be applied, or it contain a few particles of calcareous or magnesian earth. When heated it hardens and burns to brick. It consists of argill and fine sand, usually of the siliceous kinds, in various proportions, and more or less feruginous. The argill forms commonly from twenty to seventy-five per cent. of the whole mass, the sand and calx of iron the remainder. These are perfectly separable by boiling in sulphuric acid.

Chalk if not very impure, is of a white colour, moderate consistence, and dusty surface, stains the fingers, adheres slightly to the tongue, does not harden when heated, but burns to lime, in a strong heat, and loses about four-tenths of its weight. It effervesces with acids, and dissolves almost entirely therein. When dissolved in an acid, it is not precipitated by caustic volatile alkali (*ammoniac*). This circumstance distinguishes it from *magnesia*. It promotes putrefaction.

Sand,

Sand. By this is understood small loose grains of great hardness, not cohering with water, nor softened by it. It is generally of the siliceous kind, and therefore insoluble in any of the acids except the fluoric.

Gravel differs from sand chiefly in size. Stones however of a calcareous nature, when small and rounded, are often comprehended under this denomination.

Loam denotes any soil which is less cohesive than clay, and more so than loose chalk. The following are the different species of Loam:

Clayey Loam, is a moderately cohesive soil, in which the argillaceous earth predominates. Its coherence is greater than that of any other loam; but less than that of pure clay. The other ingredient is a coarse sand, with or without a small proportion of calcareous earth. This kind of soil is called by the farmers, *strong, stiff, cold, and heavy* loam, in proportion as the clay is more or less abundant.

Chalky Loam, is formed of clay, coarse sand, and chalk; the chalk or calcareous earth being the predominant ingredient. It is less cohesive than clayey loams.

Sandy Loam, in which sand predominates, is less coherent than either of the two former. The sand, partly coarse, and partly fine, forms from eighty to ninety parts in the hundred of this compound.

Gravelly Loam, differs from the last, only in containing a larger proportion of coarse sand or pebbles.

The three last loams are generally called by farmers, *light or hungry* soils, particularly when they have but little depth.

Ferruginous

Ferruginous Loam or Till, is generally of a dark brown or reddish colour; and much harder than any of the preceding. It consists of clay and calces of iron, more or less incorporated, and is distinguishable by its colour, and superior weight. It sometimes effervesces with acids, in which case much of the irony part may be separated, by pouring upon it, when well dried, a quantity of spirit of salt (*muratic acid*). The iron may be afterwards separated by the addition of an alkali or chalk.

Vitriolic Soils, are nearly allied to the Ferruginous Loams. They are generally of a blue colour, but redden when heated. When steeped in water, they impart to it the power of reddening syrup of violets.

Boggy Soil, or Bogs, consist chiefly of the roots of decayed vegetables mixed with clay and sand, and a coaly substance, derived from decayed vegetables. Of bogs, there are two kinds; the *black*, containing a larger proportion of clay, and roots more decayed, with mineral oil; and the *red*, in which the roots appear less perfectly decayed, and form the principal part.

Heathy Soil, is that which naturally produces heath.
—Kirwan.

Solid Stem, *caulis solidus*, full within, opposed to hollow.

Solid Bulb, *bulbus solidus*, fleshy within, undivided.

Solitary Stipules, *stipulae solitariae*, simple scattered.

Somewhat Shrubby, *suffruticosus*, permanent at the base, the branches withering yearly.

Sooty, *fuliginosus*.

Spadix, *spadix*, the receptacle of a palm, produced within a spathe, divided into fructifying branchlets.

Spadiceous, *spadiceus*, having a spadix within a spathe.

Span,

Span, *spithama*, as long as the space between the points of the thumb and fore finger, when extended:—about six inches. A long Span, *dodrans*, the space between the points of the thumb and little finger, when extended:—about nine inches.

Spathe, *spatha*, a calyx bursting longitudinally.

Spathaceous, *spathaceus*, having a spathe.

Spatulate Leaf, *folium spatulatum*, roundish with a narrower linear base.

Species, the subdivision of a genus.

Specific, *specificus*. A specific character is a mark, or marks, distinguishing one species from every other belonging to the same genus. An essential or legitimate, *specific name*, exhibits the characteristic mark, peculiar to the species.

Spiciform—see Spike-like.

Spike, *spica*, alternate sessile flowers on a common simple peduncle.

Spiked Panicle, *panicula spicata*, approaching to the form of a spike.

Spikelet, *spicula*, a subdivision of a spike, a small spike.

Spike-like, *spiciformis*.

Spine—see Thorn.

Spinescent, *spinescens*, becoming hard and thorny.

Spiral, *spiralis*, curved, winding upwards.

Spiral Filament, *filamentum spirale*, ascending in a spiral line.

Spreading Stem, *caulis patens*, the branches inserted at an acute angle.

Spreading Leaf, *folium patens*, rising from the stem at an acute angle.

Spreading Panicle, *panicula patens*, the pedicles spreading out so as to form an acute angle with the stalk.

Spreading,

Spreading Corol, *corolla patens*, the laminæ fixed on the claws at an acute angle.

Spur, *calcar*—see Horn.

Spurred, *calcaratus* s. *corniculatus*, spur-shaped, or horn-shaped.

Spurred Nectary, *nectarium calcaratum*, shaped like the horn, or the spur of a cock.

Spurless, *ecalcaratus*, without a spur.

Squarrose *squarrosus*, scaly, rough, or scurfy.

Squarrose Perianth, *perianthium squarrosus*, with scales diverging on every side.

Stalk, *stipes*, when applied to the funguses.

Stalked—see Stipitate.

Stalkless, *acaulis*, wanting a stalk.

Stamen, *stamen*, an organ for the formation of the pollen.

Stamen-bearing, or Staminiiferous, *staminifer*.

Stamineous Nectary, *nectarium stamineum*, adhering to the stamen.

Standard, *vexillum*, the uppermost petal of a papilionaceous corol.

Stellate, *stellatus*, star-like.

Stellate Leaves, *folia stellata*, more than two leaves together surrounding the stem.

Stellate Bristles, *setæ stellate*, disposed in a decussated manner.

Stem, *caulis*, a trunk supporting both the leaves and the fructification.

Stem Bulb, *bulbus caulinus*, sitting on the stem.

Stem-clasping, *amplexicaulis*, embracing the stem. A leaf is termed stem-clasping, when surrounding the stem with its base.

Stem-leaf, *folium caulinum*, attached to the stem.

Stem-less, *acaulis*, without a stem.

Stiff,

Stiff, *strictus*—see Rigid.

Stigma, *stigma*, the summit of the pistil, moist with a fluid.

Stings, *stimuli*, daggers forming inflammatory punctures.

Stinging, *urens*, applied to a stem sprinkled with stings.

Stipe, *stipes*, a trunk passing into the leaves: (the base of a frond.)

Stipitate, *stipitatus*, furnished with a stipe, or filiform trunk connecting the pappus and seed.

Stipular Bud, *gemma stipularis*, consisting of stipules.

Stipuled, *stipulatus*, applied to a stem furnished with stipules.

Stipule-less, *extipulatus*, without stipules.

Stipules, *stipulæ*, scales standing at the base of the rising petioles.

Stock, *caudex*, the stem or trunk of a tree. According to Linnaeus, the descending stem (*caudex descendens*) terminates in roots; and the ascending stem (*caudex ascendens*) in branches supporting the leaves and fructification.

Stolon, *stolo*, a shoot or scion, from the root of a plant, by which it may be propagated.

Stoloniferous, *stoloniferus*, applied to a stem sending out stolons, or shoots from the root.

Stone—see Nut.

Straight Awn, *arista recta*, going off perpendicularly.

Straight Calyptræ, *calyptra recta*, on every side equal.

Straight Legume, *legumen rectum*, without bending.

Straightish, *rectiusculus*, somewhat straight.

Strait, *arctus*, as the calyx in Syngenesious plants.

Streaked Leaf, *folium lineatum*, with depressed nerves.

Streaks, *strice*, furrowed lines.

Striated

Striated Stem, *caulus striatus*, inscribed with very fine depressed lines.

Striated Leaf, *folium striatum*, slightly hollowed with parallel lines.

Strigas, *strigæ*, flattish, rather rigid hairs.

Strigose Leaf, *folium strigosum*, armed with rigid, lanceolate prickles.

Strobile, *strobilus*, a pericarp formed from an ament, the scales becoming indurated.

Strobilaceous, *strobilaceus*, *s. strobiliformis*, having the form of a strobile.

Structure, *structura*, figure.

Stuffed Legume, *legumen farctum*, full of a pulpy or fleshy substance.

Style, *stylus*, part of the pistil elevating the stigma from the germen.

Styptic, *stypticus*, astringent.

Subdivided, *subdivisus*.

Suberous—see Cork-like.

Submarine, *submarinus*.

Submersed Leaf, *folium submersum*, hidden under the surface of the water.

Subulate, *subulatus*, awl-shaped.

Subulate Leaf, *folium subulatum*, linear at the base, tapering towards the point.

Succulent Drupe, *drupa succulenta*, juicy, containing a fluid.

Sucker—see Stolon.

Summit, *apex*—see Apex.

Superaxillary Flowers, *flores superaxillares*, above the axil. See Axil.

Superdecompound, *supradecompositus*, more than doubly compound.

Superior,

Superior, *superus*, *s. superior*.

Superior Perianth, *perianthium superum*, when the germen is under the receptacle.

Superior Germen, *germen superum*, included in the corol.

Supine, *supinus*—see Disk.

Suprafoliaceous, *suprafoliaceus*, inserted into the stem or branch above the leaf, petiole, or axil.

System, *systema*—see Method.

Sweet, *dulcis*.

Syngenesia, the name of the nineteenth Class in the Linnean System.

Syngenesia, is also the name of an Order.

Syngenesious, *syngenesius*, having the anthers united.

T

Tail, *cauda*, a thread terminating the seed.

Tailed Seed, *semen caudatum*, terminated by a naked or feathery filament.

Tail-less, *ecaudatus*, without a tail.

Tapering *attenuatus*, applied to a peduncle diminishing gradually in thickness towards the extremity.

Target, *pelta*, a flat orbicular fructification, found on some Lichens.

Taste, *sapor*, affecting the nervous papillæ of the tongue.

Tendril, *cirrhus*, a filiform spiral band, by which a plant is tied to another body.

Tendrilled Leaf, *folium cirrhosum*, terminating in a tendril.

Tendril-bearing, *cirrhifer*.

Tergeminate Leaf, *folium terginatum*, triply-geminate, a bifid petiole bearing two leaflets at each summit, and two others at the fork of the common petiole.

Terminal

Terminal, or Terminating, *terminalis*, opposed to lateral.

Terminal Thorn, *spina terminalis*, placed at the apex of the plant. Peduncles and flowers are also termed terminal, when standing at the extremity of the stem or branches.

Terminal Awn, *arista terminalis*, fixed to the top of the glume

Ternate Leaf, *folium ternatum*, digitate, with three leaflets.

Tessellated, *tessellatus*, chequered.

Tetradynamia, the name of the fifteenth Class in the Linnaean System.

Tetradynamous, *tetradynamus*, *s. tetradynamicus*, having six stamens, two of which are constantly shorter than the others.

Tetraedrous, *tetraedrus*, four-sided.

Tetragonal—see Four-cornered.

Tetragynia, the name of one of the Orders in many Classes.

Tetrandria, the name of the fourth Class in the Linnean System.

Tetrandria, is also the name of an Order.

Tetrandrous, *tetrandus*, having four stamens.

Thalamus—see Receptacle.

Thick Style, *stylus crassus*, with respect to the stamens.

Thickish, *crassiusculus*, somewhat thick.

Thorn, *spina*, a dagger protruded from the wood of the plant.

Thorny Stem, *caulis spinosus*, armed with thorns.

Thorny Leaf, *folium spinosum*, having pungent, rigid, subulate points on the margin.

Thread, *filum*, *s. filamentum*.

Thread-like—see Filiform.

Three-capsuled, *tricapsularis*.

Three-celled, *trilocularis*—see Cell.

Three-cleft, *trifidus*—see Cleft.

A DICTIONARY OF

- Three-cornered, *trigonus*.
- Three-flowered, *triflorus*—see One-flowered.
- Three-furrowed, *trisulcus*—see Furrowed.
- Three grained, *tricoccus*.
- Three-leaved, *triphyllus*.
- Three-lobed, *trilobus*—see Lobe.
- Three-nerved, *trinervis*—see Trinerved Leaf.
- Three-paired, *trijugus*—see Two-paired.
- Three-parted, *tripartitus*—see Parted Leaf.
- Three-petalled, *tripetalus*.
- Three-pointed, *tricuspidatus*—see Cuspidate.
- Three-seeded, *trispermus*.
- Three-sided, *triqueter*.
- Three-toothed, *tridentatus*.
- Three-valved, *trivalvis*—see Two-valved.
- Three-together, *ternus*—see Two together.
- Three-winged, *trialatus* s. *tripterygius*.
- Throat, *faux*, the opening between the segments of the corol, at the termination of the tube (in one-petalled flowers).
- Thyrse, *thyrsus*, a panicle condensed into an ovate form, as in Butter-bur.
- Tomentum, *tomentum*, interwoven soft hairs; scarcely discernible.
- Tomentous Stem, *caulis tomentosus*, covered with soft hairs, interwoven, but not discernible.
- Tomentous Leaf, *folium tomentosum*, covered with interwoven soft hairs, scarcely, or not at all discernible.
- Tongue-shaped—see Linguiform.
- Tooth, *dens*.
- Toothed or Dentate Root, *radix dentata*, like a necklace, consisting of joints chained together.

Toothed

Toothed or Dentate Leaf, *folium dentatum*, with remote spreading points along the margin. Dentate-serrated Leaf, *folium dentato-serratum*. Dentate-sinuate Leaf, *folium dentato-sinuatum*.

Toothed Filament, *filamentum dentatum*, having toothlets.

Toothlet, *denticulus*.

Top, *apex*—see Apex.

Torose, *torosus*, protuberant.

Torose Siliqua, *siliqua torosa*, having protuberances here and there.

Torose Legume, *legumen torosum*, gibbous, with protuberances disposed linearly.

Torulose, *torulosus*, somewhat protuberant.

Touch, *tactus*, affecting the nervous papillæ of the skin.

Tough, *tenax*.

Tracheæ—see Vessels.

Transverse Dissepiment, *dissepimentum transversum*, narrower, the tightened valves becoming concave: (running across from one valve to the other).

Trapeziform, *trapeziformis*, of a plane figure, with four unequal sides.

Trapeziform Leaf, *folium trapeziforme*, in the form of a trapezium.

Tree, *arbor*, a vegetable with a single woody trunk.

Triandria, the name of the third class in the Linnæan System.

Triandria, is also the name of an Order.

Triandrous, *triandrus*, having three stamens.

Triangular, *triangularis*, three-cornered.

Triangular Leaf, *folium triangulare*, in the form of a triangle. Quadrangular or four-cornered, *quad-*

rangulare. Quinquangular, or Five-cornered, *quinquangulare*, &c. &c. according to the number of angles.

Tribe, *tribus*. The tribes of vegetables, according to Linnæus, are three.

1. *Monocotyledones*, containing the *Palmæ*, *Gramina*, and *Lilia*, the three first nations, or casts.
2. *Dicotyledones*, comprehending the *Herbæ* and *Arbores*, the fourth and fifth nations.
3. *Acotyledones*, under which are included the four cryptogamous orders, or four last nations, viz. *Filices*, *Musci*, *Algæ* and *Fungi*.

Trichotomous, *trichotomus*, dividing by threes.

Tricoccus, *tricoccus*. This term is applied to a capsule, and signifies that it is swelled out into three protuberances, and is internally divided into three cells, each containing one seed.

Tricuspidate—see Three-pointed.

Tridentate—see Three-toothed.

Triduous, *triduus*, applied to a flower continuing three days.

Trifid—see Three-cleft.

Trigeminate—see Tergeminate.

Trigynia, the name of an order.

Trigynous, *trigynus*, having three pistils.

Trijugous—see Three-paired.

Trinerved Leaf, *folium trinerve*, having three nerves meeting in the base of the leaf.

Trinervate Leaf, *folium trinervatum*, having three nerves meeting beyond the base of the leaf.

Tricecia, the name of the third order of the class Polygamia.

Trioicous, *trioicus*, having three houses, or male, female, and hermaphrodite flowers on three individuals of the same species.

Tri-

Tripartite—see Three-parted.

Tripetalous—see Three-petalled.

Triphyllous—see Three-leaved.

Tripinnate Leaf, *folium tripinnatum*, thrice pinnate.

Triple-nerved Leaf, *folium triplinerve*, having three nerves meeting above, or short of the base of the leaf.

Triply-compound—see Super-decompound.

Triquetrous, *triqueter*, three-sided.

Triquetrous Stem, *caulis triqueter*, with three exactly flat-sides.

Triquetrous Leaf, *folium triquetrum*, subulate, with three longitudinal sides.

Trispermous—see Three-seeded.

Triterminate Leaf, *folium triternatum*, thrice ternate.

Trivalved—see Three-valved.

Trivial, *trivialis*. A trivial name generally consists of only one word, which is placed after the generic name, for the more ready discrimination of species of the same genus. It is subjected to no laws, and is seldom expressive of any characteristic mark, being for the most part either a rejected generic name, or taken from the soil, place of growth, &c. The specific name, on the contrary, expresses the most prominent characteristic circumstance of the species. The trivial, however, is frequently confounded with the specific name.

Truncated Leaf, *folium truncatum*, terminating in transverse line.

Trunk, *truncus*, an organ multiplying the plant.

Tube, *tubus*, the lower-part of a one-petalled corol.

Tubercle, *tuberculum*, a little knob like a pimple, either spherical, or only convex on the upper side.

Tubercled, or Tubercular, *tuberculatus, s. tuberculosus*, covered with tubercles,

- Tubercled Legume, *legumen tuberculatum*, covered with cartilaginous points.
- Tuberous Root, *radix tuberosa*, consisting of fleshy parts, connected at the base by a thread.
- Tubular, *tubulosus*, hollow.
- Tubular Leaf, *folium tubulosum*, internally hollow or pithy.
- Tubular Corol, *corolla tubulata*, all the corollets of the florets tubular, nearly equal.
- Tubular Anthers, *antheræ tubulatæ*, coalesced so as to form a tube.
- Tuft, *cornu*, bractes terminating the stem, remarkable for their size.
- Turbinate Perianth, *perianthium turbinatum*, turban-shaped, inversely conical.
- Turbinate Capsule, *capsula turbinata*, turban-shaped.
- Turgid, *turgidus*, swollen.
- Turgid Legume, *legumen turgidum*, swollen, but not hollow like a bladder.
- Turioniferous, *turionifer*, shoot-bearing.
- Twin, *geminatus*—see Dydymous.
- Twining, *torsio*, *s. intorsio*, the bending of the parts of a plant towards one side.
- Twining Stem, *caulis volubilis*, ascending in a spiral line, by the assistance of other bodies. Some plants twine from the left to the right, in the direction of the Sun's apparent motion, when the spectator faces the south, as *Hop*, *Honeysuckle*, &c. others twine from the right to the left, contrary to the apparent motion of the Sun, as *Bindweed*, *Scarlet Kidney Bean*, &c.
- Twisted Awn, *arista tortilis*, twisted like a cord.

Twisted

Twisted Corol, *corolla torta*, bent to one side.

Two-capsuled, *bicapsularis*.

Two-celled, *bilocularis*—see Cell.

Two-cleft, *bifidus*. A leaf is termed two-cleft *bifidum*, three-cleft, *trifidum*, &c. according to the number of fissures.

Two-edged, *caulis anceps*, with two opposite, rather acute angles.

Two-flowered, *biflorus*—see One-flowered Glume.

Two-grained or Dicoccous, *dicoccus*.

Two-horned, *bicornis*.

Two-lamellated—see Bilamellated.

Two-lipped, *bilabiatum*.

Two-leaved, *diphyllus*—see One-leaved Perianth.

Two-lobed, *bilobus*—see Lobed Leaf.

Two-paired, *bijugus*—see Bijugous.

Two-parted, *bipartitus*—see Parted Leaf.

Two-petalled, *dipetalus*—see One-petalled Corol.

Two-rowed Branches, *rami distichi*, pointing two ways, although arising on every side of the trunk.

Two-rowed Leaves, *folia disticha*, pointing in two directions, although inserted on every side of the branch.

Two-rowed Spike, *spica disticha*, all the flowers pointing two ways.

Two-seeded, *disperum*.

Two-spiked, *distachyus*.

Two together, *binus*. This term is applied to two leaves proceeding from the same point. Three together *terna*. Four together, *quaterna*, &c. &c. according to the number of leaves at the joints of the branches.

Two-toothed, *bidentatus*.

Two-valved Glume, *gluma bivalvis*, consisting of two scales.

Two-valved Spathe, *spatha bivalvis*, opening on two sides.

Two-winged, *dipterygius*.

U

Uliginous Soil, *solum uliginosum*, spongy, filled with putrid water.

Umbel, *umbella*, a receptacle from the same centre, elongated into proportionate filiform peduncles.

Umbellate, *umbellatus*, having the flowers in umbels.

Umbellet, *umbellula*, several peduncles proceeding from the same centre, and forming an equal circumference.

Umbelliferous, *umbellifer*, umbel-bearing. See Umbellate.

Umbilicate, *umbilicatus*, depressed like the navel.

Umbilicate Stigma, *stigma umbilicatum*, concave orbicular.

Umbilicus. When this term is applied to some fruits it indicates the cavity, where the receptacle of the flower was situated; when applied to a seed, it indicates the part where the navel-string, which connects it with the receptacle, is inserted.

Unarmed, *inermis*, without thorns or prickles.

Uncinate, *uncinatus*, hooked at the extremity. See Hooked.

Under-Shrub, *suffrutex*, somewhat lower than a shrub, permanent or woody at the base, the annual branches decaying.

Undulated Leaf, *folium undatum*, s. *undulatum*, having the disk alternately bent in obtuse folds.

Unequal

- Unequal Perianth, *perianthium inæquale*, some of the segments smaller.
- Unequal Corol, *corolla inæqualis*, when the parts correspond in proportion, but not in size.
- Unguiculate—see Clawed.
- Ungulate, or Hoof-shaped, *ungulatus*.
- Uniform, *uniformis*, of equal size and form.
- Unilateral—see One-sided.
- Universal Umbel, *umbella universalis*, composed of several simple ones.
- Universal Involucre, *involucrum universale*, placed beneath an universal umbel.
- Unisexual, *unisexualis*, having one sex.
- Urceolate Corol, *corolla urceolata*, somewhat globular, gibbous, open at the end; pitcher-shaped.
- Urceolate Stigma, *stigma urceolatum*, pitcher-shaped.
- Utricle, *utriculus*—see Bladders.

V

- Vaginal, *vaginalis*, furnished with a sheath.
- Valve, *valva*, *s. valvula*, the coat or covering of the fruit; according to the number of valves a capsule is termed Two-valved, *bivalvis*. Three-valved, *trivalvis*, &c. &c.
- Variation, *variatio*, the change which takes place in a plant from any accidental cause, as from climate, soil, culture, &c.
- Variety, *varietas*, is applied to such individual plants as differ in some circumstances from others of the same species, but not so essentially or permanently, as to induce us to consider them as distinct species.
- Vault—see Arch.

Vaulted

Vaulted—see Arched.

Veil—see Curtain.

Veiled, *velatus*, furnished with a curtain.

Vein, *vena*, a vessel branching, or variously divided, over the surface of a leaf, &c.

Veined Leaf, *folium venosum*, having vessels variously divided.

Veinless, *avenis*, destitute of veins.

Venoso-reticulated, *venoso-reticulatus*, having the veins disposed so as to form a net work.

Ventricose, *ventricosus*, distended; bellying.

Ventricose Spike, *spica ventricosa*, gibbous at the sides.

Ventriculous, *ventriculosus*, somewhat ventricose.

Vernation, *vernatio*, the disposition of the leaves within the bud.

Verrucose—see Warty.

Versatile Anther, *anthera versatilis*, incumbent, but freely moveable.

Vertex, *vertex*, the region of the seed directly opposite to the base.

Vertical Leaf, *folium verticale*, obverse, having the region of the base narrower than the region of the apex.

Verticil, *verticillus*, several flowers surrounding the stem in the form of a ring.

Verticillate, *verticillatus*, bearing verticils.

Very entire, *integerrimus*. This term is applied to a leaf having the margin linear, not in the least cut.

Very long Petiole, *petiolus longissimus*, several times longer than the leaf.

Very long Corol, *corolla longissima*, several times longer than the calyx.

Very long Filaments, *filamenta longissima*, longer than the corol,

Very

Very long Anther, *anthera longissima*, much longer than the filament.

Very long Style, *stylus longissimus*, with respect to the stamens.

Very long Legume, *legumen longissimum*, with respect to the corol.

Very much Branched, *ramosissimus*, applied to a stem, having very numerous branches, disposed without order.

Very numerous, *creberrimus*.

Very remote Calyptra, *calyptra remotissima*, distant from the head, or pileus.

Very short Petiole, *petiolus brevissimus*, not nearly as long as the leaf.

Very short Stipules, *stipulæ brevissimæ*, not nearly as long as the petiole.

Very short corol, *corolla brevissima*, not as long as the calyx.

Very short Filaments, *filamenta brevissima*, much shorter than the Corol.

Very short Anther, *anthera brevissima*, much shorter than the filament.

Very short Style, *stylus brevissimus*, with respect to the stamens.

Very simple, *simplicissimus*, applied to a stem with scarcely any branches.

Very small Germen, *germen minimum*, in proportion to the corol.

Vesicle, *vesicula*, a little bladder.

Vesicular, *vesicularis*, s. *vesiculosus*, having small bodies like bladders on the surface.

Vessels,

Vessels, *vasa*, according to Linnæus, are of three kinds,

1. *Succiferous* or *Sap-vessels*, destined to convey the juices of the plant.
2. *Air Vessels*, (*Tracheæ*) for receiving and distributing air.
3. *Utricles*, or small bladders, containing secreted fluids.

The *Tracheæ* are, however, considered as absorbents by Dr. Darwin, who, as well as some other writers, on the anatomy, and physiology of vegetables, contend, with great probability, that plants, besides the vessels attributed to them by Linnæus, possess other species; and that the circulation is performed, like that of animals, by the irritability of their vessels to the stimulus of the contained fluids. See Introduction page 5.

Vigils—see Watchings.

Villous Stem, *caulis villosus*, covered with soft hairs. The term villous is also applied to a leaf when clothed with soft hairs.

Violet, *violaceus*.

Viscid Leaf, *folium viscidum*, besmeared with a tenacious humour.

Viscosity, *viscositas*, expresses the quality of a tenacious fluid.

Viviparous Fractification, *fructificatio vivipara*, when the rudiment of the germen grows out into leaves.

Volva—see Curtain and Wrapper.

W.

Warty, *verrucosus*, covered with little hard knobs or warts,

Watchings,

Watchings, *vigiliæ*, determinate hours of the day, at which the flowers of a plant daily begin to open, expand, and close.

Water, *aqua*. Water is regarded, by some vegetable physiologists, as constituting the sole food of plants; but although its influence in the process of vegetation cannot be questioned, there seems no reason to infer, from any experiments hitherto made, that it is sufficient of itself to produce any considerable expansion of the vegetable. In all organized bodies, whether animal or vegetable, growth consists merely in an increase of parts, from the addition of inorganic matter. Now, although water, when decomposed within the vegetable, affords hydrogen and oxygen, the former of which is retained for the formation of oils, gums, resins, &c. whilst the latter is in part applied to the production of vegetable acids, and partly exhaled in a gaseous form, yet carbon, which would appear to be an essential ingredient in the food of vegetables, not only from an analysis of the substances in which they grow, but from an examination of the constituent parts of the plants themselves, cannot be supplied by the water, or, at least, only in a very small proportion. Even, vegetable mould, in which this substance is more certainly and uniformly found than in water, does not furnish it in sufficient quantities for the purposes of perfect vegetation, without new supplies, or the occasional aid of manures, the fertilizing effects of which seem to correspond with the quantity of the carbonaceous principle they contain.

Watery, *aquosus*.

Wedge-shaped—see Cuneiform.

Wheel-shaped—see Rotate.

White, *albus*, when all the rays are reflected together.

Whitish, *albidus*.

Wings, *alæ*, the lateral petals of a papilionaceous corol.

Wing, *ala*, the membrane affixed to a seed, whereby it flies, and is disseminated.

Winged Petiole, *petiolus alatus*, dilated at the sides.

Woody, *ligneus*, *s. lignosus*, opposed to herbaceous.

Woody Capsule, *capsula lignea*, of a woody texture.

Woody Soil, *solum sylvaticum*, shady, gravelly, barren.

Wool, *lana*, curled dense hairs.

Woolly Leaf, *folium lanatum*, clothed as with a cobweb; (the hairs spontaneously curling).

Wrapper, *volva*, a membrane enveloping completely some species of funguses in their young and unexpanded state. This is not the part termed *volva* by Linnæus. See Curtain.

Wrinkled Leaf, *folium rugosum*, full of wrinkles.

Writhed, *contortuplicatus*, very much twisted.

Y

Yellow, *luteus s. flavus*.

Yellowish, or becoming yellow, *flavesceus s. lutesceus*.

Z

Zig-zag—see Flexuose.

DIRECTIONS FOR THE FORMATION. OF AN HERBARIUM.

The advantages of an Herbarium, or collection of plants, to the botanical student, are so extremely obvious, as to render any detail of them unnecessary.

In order to preserve plants for botanical purposes, some botanists employ a small press, whilst others place their specimens in a box of sand, and others again give the preference to a hot smoothing iron.

These different methods, each of which has its peculiar advantages, are all applicable to the plants comprehended under the first twenty-three classes, as well as to a number of those belonging to the class Cryptogamia; but the funguses, which do not admit of being dried, so as to preserve their natural form and colour, are usually immersed in liquids of various kinds.

When we intend to adopt the first of these methods, the botanical press may be constructed of two Boards of well seasoned wood, not liable to warp, eighteen inches in length, twelve inches in breadth, and two inches in thickness. A male screw should be fixed in each corner of the lower board, and four corresponding holes made in the corners of the upper one, of a sufficient size to allow the male screws to pass easily through them. These two
boards

boards are to be screwed together by means of four nuts made of the same material as the screws, and of such a form as to be easily turned by the hand; and for the convenience of moving and using the press, a handle, such as is used for drawers, should be fixed in the middle of the upper plank. It will likewise be necessary to procure several pieces of strong paste-board, somewhat less than the press, and a few quires of blossom paper of the same size as the paste-board.

The specimens to be preserved, should be collected as free from moisture as possible, and in the state best adapted for exhibiting their generic and specific characters to advantage. They ought to be carried home in a tin box, and allowed to remain in it until we find it convenient to attend to their preservation. With this intention, having covered one of the paste-boards with a single sheet of paper, place carefully on it one of the specimens; and after having spread out the leaves, and displayed the flowers in the manner best calculated for showing the generic character, three, four, or more sheets of paper should be placed on it, in proportion to the size, and succulency of the plant. Having in the same manner disposed all our plants on the paste-boards they must be placed in the press, one upon another, employing at first only a moderate degree of pressure. At the termination of twenty-four hours, the specimens should be examined; the leaves and petals spread out, which may have been improperly folded; the direction of the stem and branches corrected when necessary; and the upper papers removed, and replaced with an equal number of dry ones. The plants thus disposed should be replaced in the press, and a pretty considerable force employed in screwing it. Having stood two days in
this

this state, either near a fire or exposed to the influence of the sun, they must be re-examined, the papers changed, again returned to the press, and subjected to a very strong degree of pressure. After remaining three days longer in the press, they must be once more taken out, and those which appear sufficiently dried, should be removed, each into a sheet of writing-paper; whilst such as from their greater bulk or succulency, still retain some degree of humidity, must have fresh papers applied to them, and be kept in the press some time longer: since, if taken out when insufficiently dried, the leaves and flowers would shrivel or become black and mouldy.

The above directions will be sufficient for the generality of specimens; but some tender plants, which dry very quickly, ought in the first instance to be exposed to a very considerable degree of pressure, to prevent their shrivelling; and when we are anxious for very beautiful specimens, the papers should be changed every day, as nothing injures the colour more than being long exposed to moisture.

Two or more small specimens may be placed on one paste-board, taking care they do not come into contact with one another: and on the contrary, should the plants be longer than the paste-boards, they must be cut of a proper length, and one or two of the lower leaves, if necessary, preserved. If this, however, cannot be done without injury to the specific character, the plants may either be doubled, or they should be divided, and the whole preserved.

When the root is to be preserved, it should be well brushed, or washed, and if very large it is proper to thin it, when that can be done, without injury to its figure.

Some botanists remove the woody part of the branches of shrubs, and trees, after dividing the bark with a sharp knife : and it is likewise customary, in preserving specimens with very firm compound flowers, to cut away one half of the flowers by a vertical section ; in this way the plants not only become sooner dry, but occupy less room in a collection. When a press cannot be readily procured, the specimens may be dried tolerably well between the leaves of a large folio book, laying other books or weights upon it, to produce the requisite degree of pressure.

Plants may be more expeditiously dried in a box of sand, than by the method above described ; and in some cases, it succeeds better in preserving their colours. When this mode is adopted, the specimens after being slightly pressed for six or twelve hours, must be disposed within single sheets of blotting paper, and their leaves and flowers properly adjusted. They ought then to be placed in a sufficiently large box, with a layer of very fine dry sand, about an inch deep in the bottom, and a similar layer interposed between each of them. The box should then be placed near a large fire, or in an oven gently heated, where it may remain two or three days ; at the end of which time, the sand ought to be carefully removed, the plants examined ; and if any of them appear to be insufficiently dried, they must be replaced in the box, and exposed for some time longer to the same degree of heat as before. Sand is likewise employed for the purpose of preserving plants and flowers of their original forms, as well as colours ; in which case, it is warmed and spread over the bottom of the box, to the height of one or two inches ; the specimen is then placed lightly on it, without the intervention of paper, and as much of the warm sand shaken gently into the box,

as completely to cover it. The box should then be set in an oven, or near a fire, till the plant or flower be sufficiently dried. Specimens preserved in this way are very beautiful, but they are easily injured though moved ever so gently, and occupy too much room in an herbarium.

The employment of a hot smoothing iron, when properly conducted, answers perhaps better than any other method for preserving very succulent, or mucilaginous plants; and as being most expeditious, it answers best in distant botanical excursions. When this mode is resorted to, the specimens ought to be placed betwixt several sheets of blossom paper and ironed, until the whole of their moisture be exhaled. The plants are sometimes, previous to this treatment, subjected to pressure for a few hours.

The precise degree of heat, which may be employed for different kinds of plants without producing any change in their colours, can only be accurately determined by experience.

Whichever of the above methods be practised, the specimens, when completely dry, should be removed into sheets of writing paper of the same size as those used in preparing them; upon which the generic and trivial names of each, the place where, and time when it was found, together with any other remarks which may be deemed proper, should be written.

Some botanists glue their plants to the writing paper, but this practice is attended with considerable trouble, and the specimens are more conveniently examined when allowed to remain loose within the papers; others only fasten them by means of small slips of paper, pasted across the stem or branches, whilst others again sew them to the paper with a needle and fine thread.

The arrangement of our specimens merits particular attention, since in proportion to the accuracy with which it is executed, will be the advantage derived from the collection. The most convenient method is to place together the species of each genus; the genus of each section or subdivision; the sections of each order; and the orders of each class; and to distinguish these divisions from each other, by placing them in sheets of paper of different colours, and writing upon them their names and titles. When a genus, however, is very extensive, and has several subdivisions, the species belonging to each of these should also be kept in distinct sheets of paper.

The specimens belonging to each class should be placed betwixt two pasteboards, and closely tied to prevent the access of air, and to keep them in their proper forms and places. They may then be tilted, and arranged according to the Sexual system: or instead of being tied up in pasteboards, they may be kept in a cabinet made for the purpose, and having as many drawers as there are classes, so that one drawer may be appropriated to each class. The specimens should be kept dry, and occasionally examined, lest they suffer injury from the moisture, or the depredations of insects.

The methods of drying and arranging specimens, described above, are applicable, as has been already observed, to all the plants with conspicuous flowers, and amongst the Cryptogamous plants to the *Felices*, *Musci*, and some of those belonging to the Order *Algæ*. The *Musci*, however, from their extreme minuteness, as well as several of the *Algæ*, are more conveniently preserved in papers of a smaller size, to which they may be fastened by paste or gum-water, which should be mixed with a small quantity of
the

the seeds of staves-acre reduced to a fine powder, in order to prevent the depredations of insects.

But some *Algæ* require a different treatment, the *Lichens*, for example, are best preserved by being simply dried without pressure: they should be kept in shallow drawers, divided by partitions into small squares.

The *Fuci* and other marine plants, before being laid down to dry, should be repeatedly soaked in fresh water to free them from saline particles, otherwise the specimens will be much injured by imbibing water from the atmosphere.

The *Confervæ*, and the finer leaved *Fuci* should be floated in a vessel of water, and carefully taken out in their expanded state, by slipping under them a pane of glass, or a thin board, covered with a piece of writing paper. Being afterwards dried between a few sheets of blotting paper, under a small degree of pressure, they become so incorporated with the writing paper, as frequently to assume the appearance of beautiful drawings. Many of the *Fungi* may be preserved, in the same manner as the *Lichens*, or they may be kept in small boxes.

For the preservation of specimens in the moist way, various liquids have been recommended, as spirit of wine, more or less diluted with water, solutions of metallic, earthy, and neutral salts in spirits and water, or in water alone, the mineral acid diluted with water, &c.

The stamens and pistils may be very well exhibited in any of these liquids, but the texture and colour of the petals are not preserved in the same degree of perfection: what seems best calculated to answer this last intention, is either proof spirit, or spirit diluted with three or four times its quantity of water.

A saturated solution of common salt answers tolerably well for preserving some flowers, and likewise for the *Musci* and several of the *Algæ*. In order to keep the flowers immersed, it is often necessary to fix small pieces of tin-foil, or sheet-lead round the peduncles; and to prevent the access of air, or the evaporation of the liquid, the phials or jars in which they are kept, should be completely filled and well corked. As a farther security, a piece of tin foil may be glued over the mouth of the vessel, and covered with a moist bladder, which should be painted when dry.

For preserving the *Fungi*, Dr. Withering recommends the use of a pickle and two liquors of different degrees of strength.

To prepare the pickle, take two ounces of vitriol of copper reduced to fine powder; pour upon it about a tea-cup full of cold water, stir them with a stick or quill for about a minute, then pour off the water and throw it away. On the remaining vitriol pour a pint of boiling water, and when the whole is dissolved, and become cool, add to it half a pint of rectified spirit of wine. Filtre it through paper, and keep it in a bottle closely corked.

The strong liquor is composed of eight pints of pure spring water, and a pint and a half of rectified spirit of wine.

The weak liquor, of eight pints of spring water, and one pint of spirit of wine.

The thinnest and most delicate funguses, should, immediately after they are gathered, be immersed in the pickle, and at the end of three hours be removed into a glass jar, or phial, completely filled with the weak liquor.

The more fleshy and bulky specimens, should, on the contrary, be exposed a short time to the air, in order to
exhale

exhale part of their moisture, after which they must be kept in a quantity of the pickle, for one, two, or three days, in proportion to their size, and then removed into jars filled with the strong liquor. The jars, after being closed in the manner above directed, should be titled and arranged on shelves, or in drawers properly divided.

Agarics and Boletuses, should be divided vertically, when it can be done without injuring them, in order to exhibit the inside of the stalk, and the disposition of their gills or tubes.

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Byssus, <i>Byssus</i>	Cryptogamia. Algæ	106
C		
Calamagrostis, <i>Mat-weed</i>	Triandria. Digynia	66
Calendula, <i>Marigold</i>	Syngenesia. Polygamia Nec.	94
Callitriche, <i>Star-grass</i>	Monandria. Digynia	64
Caltha	Polyandria. Polygynia	84
Campanula, <i>Bell-flower</i>	Pentandria. Monogynia	71
Cardamine, <i>Ladies-smock</i>	Tetradynamia. Siliquosa	88
Carduus, <i>Thistle</i>	Syngenesia. Polygamia Æq.	92
Carex, <i>Carex</i>	Monoecia. Triandria	96
Carlina, <i>Carlina-thistle</i>	Syngenesia. Polygamia Æq.	92
Carpinus, <i>Horn-bean Tree</i>	Monoecia. Polyandria	98
Carum, <i>Caraway</i>	Pentandria. Digynia	74
Caucalis, <i>Hen's-foot</i>	Pentandria. Digynia	73
Centaurea, <i>Blue-bottle</i>	Syngenesia. Polygamia Frust.	94
Centunculus, <i>Bastard Pimper-</i>	} Tetrandria. Monogynia	68
<i>nel, or Chaff-weed</i>		
Cerastium, <i>Mouse-ear</i>	Decandria. Pentandria	80
Ceratophyllum, <i>Horn-wort</i>	Monoecia. Polyandria	97
Chærophyllyum, <i>Chervil</i>	Pentandria. Digynia	74
Chara, <i>Stone-wort</i>	Monoecia. Monandria	95
Cheiranthus, <i>July-flower</i>	Tetradynamia. Siliquosa	87
Chelidonium, <i>Celandine</i>	Polyandria. Monogynia	83
Chenopodium, <i>Goose-foot</i>	Pentandria. Digynia	72
Cherleria, <i>Cyphel</i>	Decandria. Trigynia	80
Chironia, <i>Centaury</i>	Pentandria. Monogynia	70
Chlora, <i>Yellow-wort</i>	Octandria. Monogynia	78
Chrysanthemum, <i>Ox-eye</i>	Syngenesia. Polygamia Sup.	93
Chrysosplenium, <i>Sea-green</i>	Decandria. Digynia	79
Cichorium, <i>Succory, or Cichory</i>	Syngenesia. Polygamia Æq.	91
Cicuta, <i>Water Hemlock</i>	Pentandria. Digynia	74
Cineraria, <i>Flea Wort</i>	Syngenesia. Polygamia Sup.	93
Circæa, <i>Enchanter's Night-shade</i>	Diandria. Monogynia	65
Cistus, <i>Cistus</i>	Polyandria. Monogynia	83
Clathrus, <i>Clathrus</i>	Cryptogamia. Fungi	107
Clavaria, <i>Clavaria</i>	Cryptogamia. Fungi	107
Clematis, <i>Traveller's joy</i>	Polyandria. Polygynia	84
Clinopodium, <i>Basil</i>	Didynamia. Gymnospermia	85
	Cochlearia,	

Cochlearia, <i>Scurvy-grass</i>	Tetradynamia. Siliculosa	87
Colchicum, <i>Meadow Saffron</i>	Hexandria. Trigynia	77
Comarum, <i>Marsh Cinquefoil</i>	Icosandria. Polygynia	82
Conferva, <i>Conferva</i>	Cryptogamia. Algæ	106
Conium, <i>Hemlock</i>	Pentandria. Digynia	73
Convallaria, <i>Lilly of the Valley</i>	Hexandria. Monogynia	76
Convolvulus, <i>Bind-weed</i>	Pentandria. Monogynia	70
Conyza, <i>Great Flea-bane</i>	Syngenesia. Polygamia Sup.	93
Coriandrum, <i>Coriander</i>	Pentandria. Digynia	74
Cornus, <i>Dogberry Tree</i>	Tetrandria. Monogynia	68
Corrigiola, <i>Strap-wort</i>	Pentandria. Trigynia	75
Corylus, <i>Hazel</i>	Monoecia. Polyandria	98
Cotyledon, <i>Navel-wort</i>	Decandria. Pentagynia	80
Crambe, <i>Sea Colewort</i>	Tetradynamia. Siliculosa	87
Cratægus, <i>Service Tree</i>	Icosandria. Digynia	81
Crepis, <i>Hawk's-beard</i>	Syngenesia. Polygamia Æq.	91
Crithmum, <i>Samphire</i>	Pentandria. Digynia	73
Crocus, <i>Saffron</i>	Triandria. Monogynia	65
Cucubalis, <i>Spanish Champion,</i> or <i>Spatling Poppy</i>	Decandria. Trigynia	80
Cuscuta, <i>Dodder</i>	Tetrandria. Digynia	69
Cyclamen, <i>Sowbread</i>	Pentandria. Monogynia	70
Cynoglossum, <i>Hound's-tongue</i>	Pentandria. Monogynia	69
Cynosurus, <i>Dog's-tail</i>	Triandria. Digynia	67
Cyperus, <i>Cyperus-grass</i>	Triandria. Monogynia	65
Cypripedium, <i>Ladies Slipper</i>	Gynandria. Diandria	94
D		
Dactylis, <i>Cock's-foot grass</i>	Triandria. Digynia	66
Daphne, <i>Mexereon</i>	Octandria. Monogynia	78
Datura, <i>Thorn-apple</i>	Pentandria. Monogynia	70
Daucus, <i>Carrot</i>	Pentandria. Digynia	73
Delphinium, <i>Larkspur</i>	Polyandria. Trigynia	83
Dentaria, <i>Coral-wort</i>	Tetradynamia. Siliquosa	87
Dianthus, <i>Pink</i>	Decandria. Digynia	80
Digitalis, <i>Fox-glove</i>	Didynamia. Angiospermia	86
Dipsacus, <i>Teasel</i>	Tetrandria. Monogynia	67
Doronicum, <i>Leopard's-bane</i>	Syngenesia. Polygamia Sup.	93
Draba, <i>Whitlow-grass</i>	Tetradynamia. Siliculosa	87
Drosera, <i>Sun-dew</i>	Pentandria. Pentagynia	75
Dryas, <i>Mountain Avens</i>	Icosandria. Polygynia	82
E		
Echinophora, <i>Sea Parsnep</i>	Pentandria. Digynia	73
Echium, <i>Viper-grass</i>	Pentandria. Monogynia	69
Elatine, <i>Water-wort</i>	Octandria. Tetragynia	79
Elymus, <i>Lime-grass</i>	Triandria. Digynia	67
Empetrum, <i>Crake-berries</i>	Dioecia. Triandria.	99

Epilobium

<i>Epilobium, Willow-herb</i>	Octandria. Monogynia	78
<i>Epimedium, Barren-wort</i>	Tetrandria. Monogynia	68
<i>Equisetum, Horse-tail</i>	Cryptogamia. Filices	103
<i>Erica, Heath</i>	Octandria. Monogynia	78
<i>Erigeron, Flea-bane</i>	Syngenesia. Polygamia Sup.	93
<i>Eriocaulon, Pipe-wort</i>	Triandria. Trigynia	67
<i>Eriophorum, Cotton-grass</i>	Triandria. Monogynia.	66
<i>Ervum, Wild Tare</i>	Diadelphia. Decandria.	90
<i>Eryngium, Eryngo</i>	Pentandria. Digynia	73
<i>Erysimum, Hedge Mustard,</i> <i>or Rocket</i>	Tetradynamia. Siliquosa	87
<i>Euonymus, Spindle Tree</i>	Pentandria. Monogynia	71
<i>Eupatorium, Hemp-agrimony</i>	Syngenesia. Polygamia Æq.	92
<i>Euphorbia, Spurge</i>	Dodecandria. Trigynia	81
<i>Euphrasia, Eye-bright</i>	Didynamia. Angiospermia	86
<i>Exacum, Least Gentian</i>	Tetrandria. Monogynia.	68
F		
<i>Fagus, Beech-tree</i>	Monoecia. Polyandria	98
<i>Festuca, Fescue-grass</i>	Triandria. Digynia	67
<i>Filago,</i>	Syngenesia. Polygamia Nec.	94
<i>Fontinalis, Water-moss</i>	Cryptogamia. Musci	105
<i>Fragaria, Strawberry</i>	Icosandria. Polygamia	82
<i>Frankenia, Sea Heath</i>	Hexandria. Monogynia	76
<i>Fraxinus, Ash-tree</i>	Polygamia. Dioecia	102
<i>Fritillaria, Fritillary</i>	Hexandria. Monogynia	77
<i>Fucus, Fucus</i>	Cryptogamia. Algæ	106
<i>Fumaria, Fumitory</i>	Diadelphia. Hexandria	88
G		
<i>Galanthus, Snow-drop</i>	Hexandria. Monogynia	76
<i>Galeobdolon, Yellow Archangel</i>	Didynamia. Gymnospermia	84
<i>Galeopsis, Dead-nettle</i>	Didynamia. Gymnospermia	85
<i>Galium, Ladies-bedstraw</i>	Tetrandria. Monogynia	68
<i>Genista, Dyer's-weed</i>	Diadelphia. Decandria	89
<i>Gentiana, Gentian</i>	Pentandria. Digynia	72
<i>Geranium, Crane's-bill</i>	Monadelphia. Decandria	88
<i>Geum, Avena</i>	Icosandria. Polygynia	82
<i>Glaux, Sea Milk-wort</i>	Pentandria. Monogynia	72
<i>Glecoma, Ground-ivy</i>	Didynamia. Gymnospermia	85
<i>Gnaphalium, Cudweed</i>	Syngenesia. Polygamia Sup.	92
H		
<i>Hedera, Ivy</i>	Pentandria. Monogynia	71
<i>Hedysarum, Saintfoin</i>	Diadelphia. Decandria	89
<i>Helleborus, Hellebore</i>	Polyandria. Polygynia	84
<i>Helvella, Helvella</i>	Cryptogamia. Fungi	107
<i>Heracleum, Cow-parsnep</i>	Pentandria. Digynia	73
<i>Herniaria, Rupture-wort</i>	Pentandria. Digynia	72

Hesperis

Hesperis, <i>Dame-wort</i>	Tetradynamia. Siliquosa	87
Hieracium, <i>Hawk-weed</i>	Syngenesia. Polygamia $\text{\AA}eq.$	91
Hippocrepis, <i>Horse-shoe Vetch</i>	Diadelphia. Decandria	89
Hippophaë, <i>Sea Buckthorn</i>	Dioecia. Tetrandria	99
Hippuris, <i>Mares-tail</i>	Monandria. Monogynia	64
Holcus, <i>Soft-grass</i>	Polygamia. Monoecia	101
Holosteum,	Triandria. Trigynia	67
Hordeum, <i>Barley</i> ,	Triandria. Digynia	67
Hottonia, <i>Water-violet</i>	Pentandria. Monogynia	70
Humulus, <i>Hop</i>	Dioecia. Pentandria	100
Hyacinthus, <i>Hyacinth</i>	Hexandria. Monogynia	76
Hydnum, <i>Hydnum</i>	Cryptogamia. Fungi	107
Hydrocharis, <i>Frog-bit</i>	Dioecia. Enneandria	100
Hydrocotyle, <i>Penny-wort</i>	Pentandria. Digynia	72
Hyoscyamus, <i>Henbane</i>	Pentandria. Monogynia	70
Hyoseris, <i>Swine Succory</i>	Syngenesia. Polygamia $\text{\AA}eq.$	91
Hypericum, <i>St. John's-wort</i>	Polyadelphia. Polyandria	90
Hypnum, <i>Hypnum</i>	Cryptogamia. Musci	105
Hypochaeris, <i>Cat's-ear</i>	Syngenesia. Polygamia $\text{\AA}eq.$	91

I

Iberis, <i>Candy-tuft</i>	Tetradynamia. Siliculosa	87
Ilex, <i>Holly</i>	Tetrandria. Tetragynia	69
Illecebrum, <i>Knot-grass</i>	Pentandria. Monogynia	72
Impatiens, <i>Touch-me-not</i>	Syngenesia. Monogynia	94
Imperatoria, <i>Master-wort</i>	Pentandria. Digynia	74
Inula, <i>Elecampane</i>	Syngenesia. Polygamia Sup.	93
Iris, <i>Flower-de-luce, or Flag</i>	Triandria. Monogynia	65
Isatis, <i>Wild Woad</i>	Tetradynamia. Siliquosa	87
Isoetes, <i>Quill-wort</i>	Cryptogamia. Filices	104
Ixia, <i>Ixia</i>	Triandria. Monogynia	65

J

Jasione, <i>Sheep's Scabious</i>	Syngenesia. Monogynia	94
Juncus, <i>Rush</i>	Hexandria. Monogynia	77
Jungermania, <i>Jungermannia</i>	Cryptogamia. Algæ	105
Juniperus, <i>Juniper-tree</i>	Dioecia. Monadelphia	101

L

Lactuca, <i>Lettuce</i>	Syngenesia. Polygamia $\text{\AA}eq.$	91
Lagurus, <i>Lagurus</i>	Triandria. Digynia	66
Lamium, <i>Archangel</i>	Didynamia. Gymnospermia	85
Lapsana, <i>Nipple-wort</i>	Syngenesia. Polygamia $\text{\AA}eq.$	91
Lathræa, <i>Tooth-wort</i>	Didynamia. Angiospermia	85
Lathyrus, <i>Grass Vetch, or Vetchling</i>	Diadelphia. Decandria	89
Lavatera, <i>Velvet-leaf</i>	Monadelphia. Polyandria	83
Lemna, <i>Duck-meat</i>	Monoecia. Diandria	95
Leontodon, <i>Dandelion</i>	Syngenesia. Polygamia $\text{\AA}eq.$	91

Léonurus,

Leonurus, <i>Mother-wort</i>	Didynamia. Gymnospermia	85
Lepidium, <i>Dittander, or Pepper-wort</i>	Tetradynamia. Siliculosa	86
Leucojum, <i>Leucojum</i>	Hexandria. Monogynia	76
Lichen, <i>Liver-wort</i>	Cryptogamia. Algæ	106
Ligusticum, <i>Lovage</i>	Pentandria. Digynia	74
Ligustrum, <i>Prim, or Privet</i>	Diandria. Monogynia	64
Limosella, <i>Bastard Plantain</i>	Didynamia. Angiospermia	86
Linnæa, <i>Linnæa</i>	Didynamia. Angiospermia	86
Linum, <i>Flax</i>	Pentandria. Pentagynia	75
Lithospermum, <i>Gromwell</i>	Pentandria. Monogynia	70
Littorella, <i>Shoreweed</i>	Monoccia. Tetrandria	96
Lobelia, <i>Gladiole</i>	Syngenesia. Monogamia	94
Lolium, <i>Darnel</i>	Triandria. Digynia	67
Lonicera, <i>Honysuckle</i>	Pentandria. Monogynia	71
Lotus, <i>Bird's-foot Clover</i>	Diadelphia. Decandria	91
Lychnis, <i>Campion</i>	Decandria. Pentagynia	80
Lycoperdon, <i>Truffle</i>	Cryptogamia. Fungi	107
Lycopodium, <i>Club-moss</i>	Cryptogamia. Filices	103
Lycopsis, <i>Wild Bugloss</i>	Pentandria. Monogynia	70
Lycopus, <i>Water-horehound</i>	Diandria. Monogynia	65
Lysimachia, <i>Loose-strife</i>	Pentandria. Monogynia	70
Lythrum, <i>Willow-herb, or Grasspoly</i>	Dodecandria. Monogynia	81

M

Malaxis,	Gynandria. Diandria	94
Malva, <i>Mallow</i>	Monadelphia. Polyandria	88
Marchantia, <i>Marchantia</i>	Cryptogamia. Algæ	105
Marrubium, <i>Horehound</i>	Didynamia. Gymnospermia	84
Matricaria, <i>Feverfew</i>	Syngenesia. Polygamia Sup.	93
Medicago, <i>Medick</i>	Diadelphia. Decandria	90
Melampyrum, <i>Cow-wheat</i>	Didynamia. Angiospermia	86
Melica, <i>Melic</i>	Triandria. Digynia	67
Melissa, <i>Balm, or Calamint</i>	Didynamia. Gymnospermia	85
Melittis, <i>Bastard Balm</i>	Didynamia. Gymnospermia	85
Mentha, <i>Mint</i>	Didynamia. Gymnospermia	85
Menyanthes, <i>Bog-bean</i>	Pentandria. Monogynia	70
Mercurialis, <i>Mercury</i>	Dioecia. Enneandria	100
Merulius,	Cryptogamia. Fungi	107
Mespilus, <i>Medlar-tree</i>	Icosandria. Pentagynia	82
Milium, <i>Millet</i>	Triandria. Digynia	66
Minum,	Cryptogamia. Musci	105
Moenchia, <i>Gold-of-pleasure</i>	Tetradynamia. Siliculosa	86
Monotropa, <i>Bird's-nest</i>	Decandria. Monogynia	79
Montia, <i>Blinks</i>	Triandria. Trigynia	67
Mucor, <i>Mould</i>	Cryptogamia. Fungi	108

Myagrurn,

Myagrurn,	Tetradynamia. Siliculosa	87
Myosotis, <i>Mouse-car</i>	Pentandria. Monogynia	71
Myosurus, <i>Mouse-tail</i>	Pentandria. Polygynia	76
Myrica, <i>Gale</i>	Dioecia. Tetrandria	99
Myriophyllum, <i>Milfoil</i>	Monoecia. Polyandria	97
N		
Narcissus, <i>Daffodil</i>	Hexandria. Monogynia	76
Nardus, <i>Mat-weed</i>	Triandria. Monogynia	66
Narthecium, <i>English Asphodel</i>	Hexandria. Monogynia	77
Nepeta, <i>Cat-mint</i>	Didynamia. Gymnospermia	85
Nymphaea, <i>Water-lilly</i>	Polyandria. Monogynia	83
O		
Oenanthe, <i>Drop-wort</i>	Pentandria. Digynia	73
Ononis, <i>Rest-harrow</i>	Diadelphia. Decandria	89
Onopordum,	Syngenesia. Polygamia $\mathcal{A}eq.$	92
Ophioglossum, <i>Adder's-tongue</i>	Cryptogamia. Filices	103
Ophrys, <i>Tway-blade</i>	Gynandria. Diandria	94
Orchis, <i>Cotton Thistle</i>	Gynandria. Diandria	94
Origanum, <i>Marjoram</i>	Didynamia. Gymnospermia	85
Ornithogalum, <i>Bethlem Star</i>	Hexandria. Monogynia	77
Ornithopus, <i>Bird's-foot</i>	Diadelphia. Decandria	89
Orobanche, <i>Broom-rape</i>	Didynamia. Angiospermia	85
Orobus, <i>Heath-Pea</i>	Diadelphia. Decandria	89
Osmunda, <i>Flowering Fern, or</i>	Cryptogamia. Filices	103
<i>Moon-wort</i>		
Oxalis, <i>Wood-sorrel</i>	Decandria. Pentagynia	80
P		
Panicum, <i>Panick-grass</i>	Triandria. Digynia	66
Papaver, <i>Poppy</i>	Polyandria. Monogynia	83
Parietaria, <i>Pellitory</i>	Polygamia. Monoecia	102
Paris, <i>Herb Paris</i>	Octandria. Tetragynia	79
Parnassia, <i>Grass of Parnassus</i>	Pentandria. Tetragynia	75
Pastinaca, <i>Parsnep</i>	Pentandria. Digynia	74
Pedicularis, <i>Louse-wort</i>	Didynamia. Angiospermia	86
Peplis, <i>Water-purslane</i>	Hexandria. Monogynia	77
Peucedanum, <i>Sulphur-wort, or</i>	Pentandria. Digynia	73
<i>Hog's Fennel</i>		
Peziza, <i>Peziza</i>	Cryptogamia. Fungi	107
Phalaris, <i>Canary-grass</i>	Triandria. Digynia	66
Phallus, <i>Morel</i>	Cryptogamia. Fungi	107
Phascum, <i>Earth-moss</i>	Cryptogamia. Musci	105
Phellandrium, <i>Horse-bane</i>	Pentandria. Digynia	74
Phleum, <i>Timothy</i>	Triandria. Digynia	66
Phyteuma, <i>Rampion</i>	Pentandria. Monogynia	71
Picris, <i>Ox-tongue</i>	Syngenesia. Polygamia $\mathcal{A}eq.$	91
Pilularia, <i>Pepper-grass</i>	Cryptogamia. Filices	104
	Pimpinella,	

Pimpinella, *Burnet Saxifrage*
 Pinguicula, *Butter-wort*
 Pinus, *Pine*
 Pisum, *Pea*
 Plantago, *Plantain*
 Poa, *Meadow-grass*
 Polemonium, *Jacob's Ladder*
 Polycarpon, *All-seed*
 Polygala, *Milk-wort*
 Polygonum, *Snake-weed*
 Polypodium, *Polypody*
 Polytrichum, *Polytrichum*
 Populus, *Poplar, or Aspen Tree*
 Potamogeton, *Pond-weed*
 Potentilla, *Cinquefoil*
 Poterium, *Upland Burnet*
 Prenanthes, *Wild Lettuce*
 Primula, *Primrose*
 Prunella, *Self-heal*
 Prunus, *Plum-tree*
 Pteris, *Brakes*
 Pulmonaria, *Lung-wort*
 Pyrola, *Winter-green*
 Pyrus, *Pear-tree*

Q

Quercus, *Oak*

R

Ranunculus, *Crow-foot*
 Raphanus, *Charlock*
 Reseda, *Wood*
 Reticularia, *Reticularia*
 Rhamnus, *Buck-thorn*
 Rhinanthus, *Yellow-rattle*
 Rhodiola, *Rose-wort*
 Ribes, *Currants*
 Riccia, *Riccia*
 Rosa, *Rose*
 Rottboella, *Hard-grass*
 Rubia, *Madder*
 Rubus, *Raspberry*
 Rumex, *Dock*
 Rupia, *Tassel Pond-weed*
 Ruscus, *Butcher's-broom*

S

Sagina, *Pearl-wort*
 Sagittaria, *Arrow-head*

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 Diandria. Monogynia 64
 Monoecia. Monadelphia 98
 Diadelphia. Decandria 89
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 Dodecandria. Trigynia 81
 Cryptogamia. Fungi. 108
 Pentandria. Monogynia 71
 Didynamia. Angiospermia 86
 Dioecia. Octandria 100
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 Cryptogamia. Algæ 106
 Icosandria. Polygynia 82
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Tetrandria. Tetragynia 69
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Salicornia,

Salicornia, <i>Marsh Samphire</i>	Monandria. Monogynia	64
Salix, <i>Willow</i>	Dioecia. Diandria	99
Salsola, <i>Glass-wort</i>	Pentandria. Digynia	72
Salvia, <i>Sage</i>	Diandria. Monogynia	65
Sambucus, <i>Elder</i>	Pentandria. Trigynia	75
Samolus, <i>Brook-weed</i>	Pentandria. Monogynia	71
Sanguisorba, <i>Burnet</i>	Tetrandria. Monogynia	68
Sanicula, <i>Sanicle</i>	Pentandria. Digynia	73
Santolina, <i>Cotton-weed</i>	Syngenesia. Polygamia $\text{\AA}eq.$	92
Saponaria, <i>Soap-wort</i>	Decandria. Digynia	80
Satyrion, <i>Satyrion</i>	Gynandria. Diandria	94
Saxifraga, <i>Saxifrage</i>	Decandria. Digynia	79
Scabiosa, <i>Scabious</i>	Tetrandria. Monogynia	67
Scandix, <i>Shepherd's-needle</i>	Pentandria. Digynia	74
Schoenus, <i>Rush-grass</i>	Triandria. Monogynia	65
Scilla, <i>Squill</i>	Hexandria. Monogynia	77
Scirpus, <i>Club-rush</i>	Triandria. Monogynia	65
Scleranthus, <i>Knawell</i>	Decandria. Digynia	79
Scrophularia, <i>Fig-wort</i>	Didynamia. Angiospermia	86
Scutellaria, <i>Skull-cap</i>	Didynamia. Gynnospermia	85
Sedum, <i>Stone crop</i>	Decandria. Pentagynia	80
Selinum, <i>Milk weed</i>	Pentandria. Digynia	73
Sempervivum, <i>House-leek</i>	Dodecandria. Dodecagynia	81
Senecio, <i>Groundsel</i>	Syngenesia. Polygamia Sup.	93
Serapias, <i>Helleborine</i>	Gynandria. Diandria	94
Serratula, <i>Saw-wort</i>	Syngenesia. Polygamia $\text{\AA}eq.$	92
Sesleria, <i>Moor grass</i>	Triandria. Digynia	67
Sherardia, <i>Spur-wort</i>	Tetrandria. Monogynia	68
Sibbaldia, <i>Silver weed</i>	Pentandria. Pentagynia	76
Sibthorpia, <i>Bastard Money-wort</i>	Didynamia. Angiospermia	86
Silene, <i>Catch-fly</i>	Decandria. Trigynia	80
Sinapis, <i>Mustard</i>	Tetradynamia. Siliquosa	88
Sison, <i>Stone-parsley</i>	Pentandria. Digynia	74
Sisymbrium, <i>Water-cress</i>	Tetradynamia. Siliquosa	88
Sium, <i>Water-parsnep</i>	Pentandria. Digynia	73
Smyrnium, <i>Alexanders</i>	Pentandria. Digynia	74
Solanum, <i>Nightshade</i>	Pentandria. Monogynia	71
Solidago, <i>Golden-rod</i>	Syngenesia. Polygamia Sup.	93
Sonchus, <i>Soiw-thistle</i>	Syngenesia. Polygamia $\text{\AA}eq.$	91
Sorbus, <i>Mountain Ash, or</i> <i>Roan Tree</i>	} Icosandria. Trigynia	82
Sparganium, <i>Bur-reed</i>		
Spartium, <i>Broom</i>	Monoecia. Triandria	95
Spergula, <i>Spurry</i>	Diadelphia. Decandria	89
Sphæria, <i>Sphæria</i>	Decandria. Pentagynia	80
Sphaerocarpos, <i>Sphaerocarpos</i>	Cryptogamia. Fungi	108
	Cryptogamia. Algæ	105
	T Sphagnum,	

Sphagnum, <i>Bog-moss</i>	Cryptogamia. Musci	104
Spiræa, <i>Meadow-sweet</i>	Icosandria. Pentagynia	82
Splachnum, <i>Bottle-moss</i>	Cryptogamia. Musci	105
Stachys, <i>Wound-wort, or All-heal</i>	Didynamia. Gymnospermia	85
Staphylea, <i>Bladder-nut Tree</i>	Pentandria. Trigynia	75
Statice, <i>Thrift</i>	Pentandria. Pentagynia	76
Stellaria, <i>Stitch-wort</i>	Decandria. Trigynia	80
Stipa, <i>Feather-grass</i>	Triandria. Digynia	66
Stratiotes, <i>Freshwater Soldier</i>	Polyandria. Hexagynia	83
Subularia, <i>Awl-wort</i>	Tetradynamia. Siliculosa	87
Swertia, <i>Marsh Felwort</i>	Pentandria. Digynia	72
Symphytum, <i>Comfrey</i>	Pentandria. Monogynia	70
T		
Tamarix, <i>Tamarix</i>	Pentandria. Trigynia	75
Tamus, <i>Black Bryony</i>	Dioecia. Hexandria	101
Tanacetum, <i>Tansy</i>	Syngenesia. Polygamia Sup.	92
Targionia, <i>Targionia</i>	Cryptogamia. Algæ	105
Taxus, <i>Yew Tree</i>	Dioecia. Monadelphia	101
Teucrium, <i>Germander</i>	Didynamia. Gymnospermia	84
Thalictrum, <i>Rue-weed</i>	Polyandria. Polygynia	84
Thesium, <i>Bastard Toad-flax</i>	Pentandria. Monogynia	72
Thlaspi, <i>Shepherd's-purse</i>	Tetradynamia. Siliculosa	87
Thymus, <i>Thyme</i>	Didynamia. Gymnospermia	85
Tilia, <i>Lime Tree, or Linden Tree</i>	Polyandria. Monogynia	83
Tillæa, <i>Red-shanks</i>	Tetrandria. Tetragynia	69
Tofieldia, <i>Scotch Asphodel</i>	Hexandria. Trigynia	77
Tordylium, <i>Hart-wort</i>	Pentandria. Monogynia	73
Tormentilla, <i>Tormentil</i>	Icosandria. Polygynia	82
Tragopogon, <i>Goat's-beard</i>	Syngenesia. Polygamia Æq.	91
Tremella, <i>Tremella</i>	Cryptogamia. Algæ	106
Trichia	Cryptogamia. Fungi	107
Trichomanes, <i>Goldilocks</i>	Cryptogamia. Filices	104
Trientalis, <i>Chickweed Winter-green</i>	Heptandria. Monogynia	78
Trifolium, <i>Trifoil or Clover</i>	Diadelphia. Decandria	89
Triglochin, <i>Arrow-grass</i>	Hexandria. Trigynia	77
Triticum, <i>Wheat</i>	Triandria. Digynia	67
Trollius, <i>Globe-flower</i>	Polyandria. Polygynia	84
Tulipa, <i>Tulip</i>	Hexandria. Monogynia	77
Turritis, <i>Tower-mustard or Tower-wort</i>	Tetradynamia. Siliquosa	87
Tussilago, <i>Colt's-foot</i>	Syngenesia. Polygamia Sup.	93
Typha, <i>Cal's-tail</i>	Monoecia. Triandria	96
U		
Ulex, <i>Gorze or Whin</i>	Diadelphia. Decandria	89
	Ulmus	

Ulmus, <i>Elm</i>	Pentandria. Digynia	72
Ulva, <i>Laver</i>	Cryptogamia Algæ	106
Uredo, <i>Uredo</i>	Cryptogamia. Fungi	108
Urtica, <i>Nettle</i>	Monoecia. Tetrandria	96
Utricularia, <i>Bladder-snout</i>	Diandria. Monogynia	64
V		
Vaccinium, <i>Whortle-berry</i> or <i>Bilberry</i>	Octandria. Monogynia	78
Valantia, <i>Cross-wort</i>	Polygamia. Monoecia	102
Valeriana, <i>Valerian</i>	Triandria. Monogynia	65
Vella, <i>Cress-rocket</i>	Tetradynamia. Siliculosa	87
Verbascum, <i>Mullein</i>	Pentandria. Monogynia	70
Verbena, <i>Vervain</i>	Diandria. Monogynia	64
Veronica, <i>Speedwell</i>	Diandria. Monogynia	64
Viburnum, <i>Way-faring Tree</i>	Pentandria. Trigynia	75
Vicia, <i>Vetch</i>	Diadelphia. Decandria	89
Vinca, <i>Periwinkle</i>	Pentandria. Monogamia	71
Viola, <i>Violet</i>	Syngenesia. Monogynia	94
Viscum, <i>Mistletoe</i>	Dioecia. Tetrandria	99.
X		
Xanthium, <i>Less Burdock</i>	Monoecia. Pentandria	97
Z		
Zannichellia, <i>Horned Pond-weed</i>	Monoecia. Monandria	95
Zostera, <i>Grass-wrack</i>	Gynandria. Polyandria.	95



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CORRECTIONS AND ADDITIONS.

Page 7. Line 16 Note *dele* Editor.

— 66 — 12 for *Phlium* read *Phleum*.

— 67 — after *Hordeum* insert the following genera.

Lolium. *Involucre* one-leaved, one-flowered. *Flower* compound.
(*Involucre* one-leaved, containing one many-flowered
spikelet. Withering.)

Elymus. *Involucre* four-leaved, two-flowered. *Flower* com-
pound.

Cynosurus. *Involucre* one-leaved, lateral. *Flower* compound.

Rottbollia. *Calyx* ovato-lanceolate, flat, simple, or two parted.

Florets alternate on a flexuose rachis.

Trigynia.

Eriocaulon. *Corol* three-petalled. *Calyx* compound. *Seed* one,
crowned with the corol.

Montia. *Corol* one-petalled. *Calyx* two-leaved. *Capsule* three-
valved, three-seeded.

Polycarpon. *Corol* five petalled. *Calyx* five-leaved. *Capsule*
three valved.

Holosteum. *Corol* five petalled. *Calyx* five-leaved. *Capsule*
opening at the top.

Page 109 Line 19 for *acotyledonis s. acotyledoneus* read *aco-*
tyledones, plants having

— 112 Line 1 for *auritus s. auriculatus* read *auritus s. au-*
riculatus.

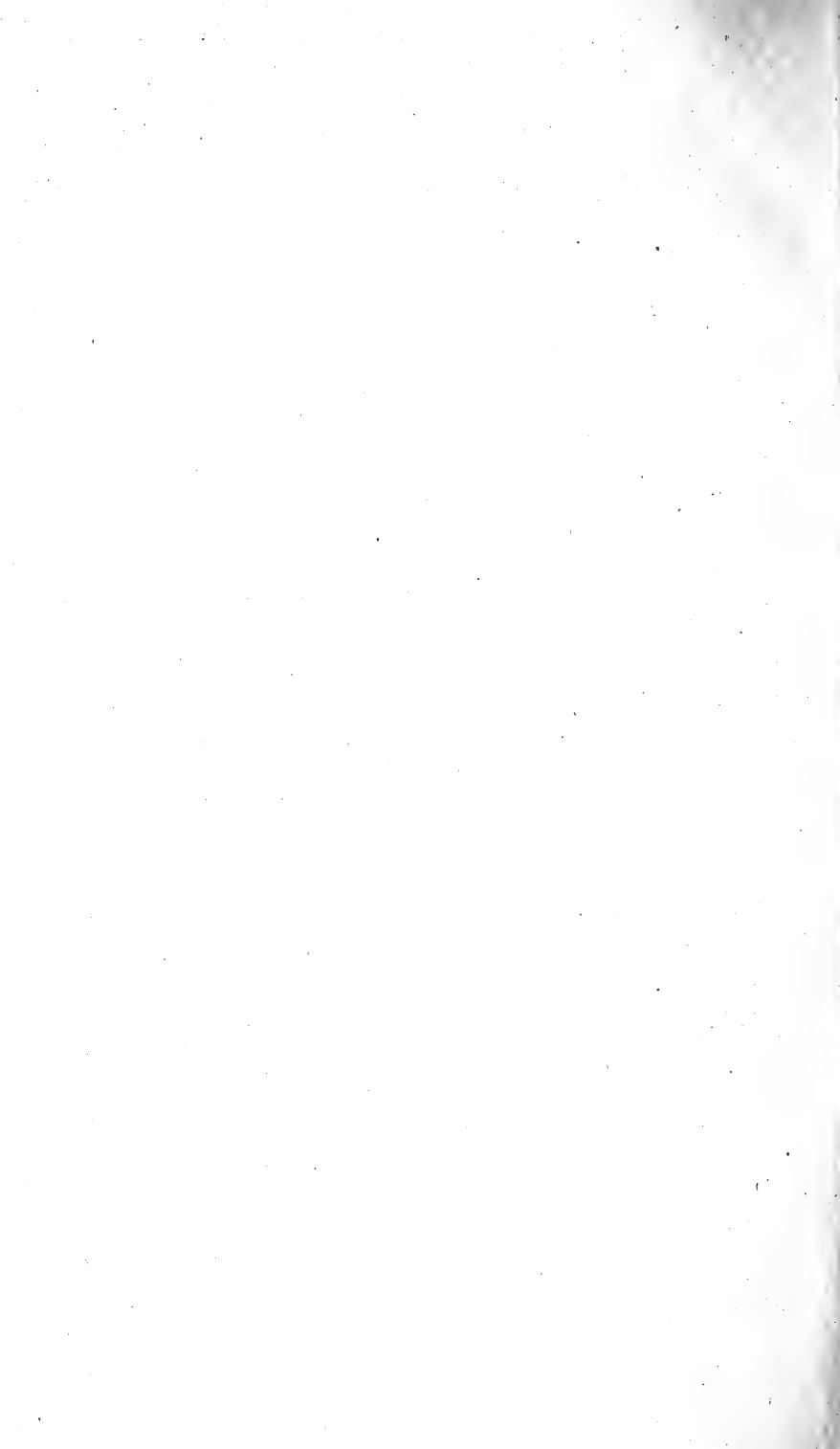
— 112 Line 5 for expressive of, read applied to.

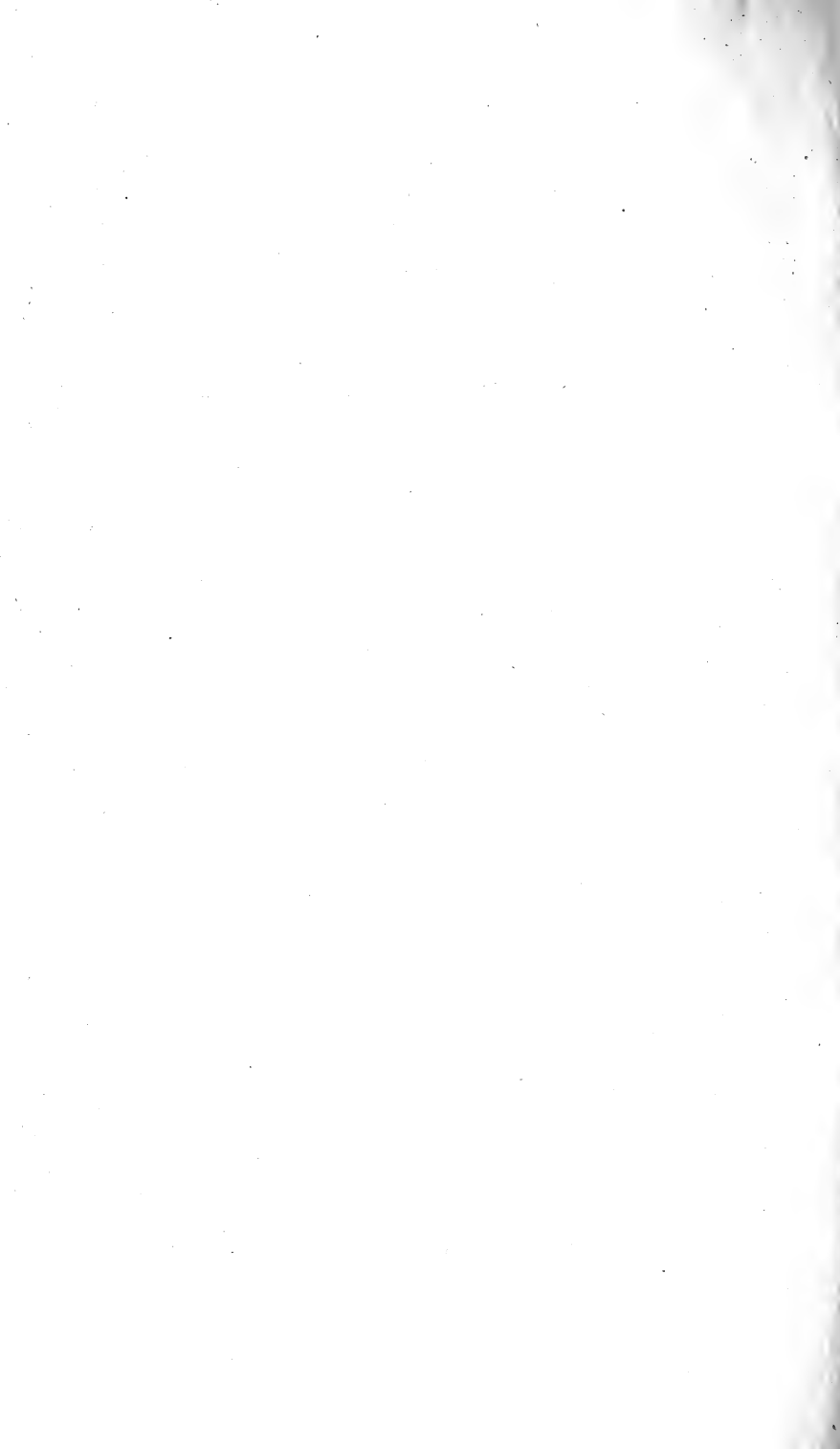
There, perhaps, will be found some other inaccuracies, but
which it is presumed, no reader can be at a loss to correct.

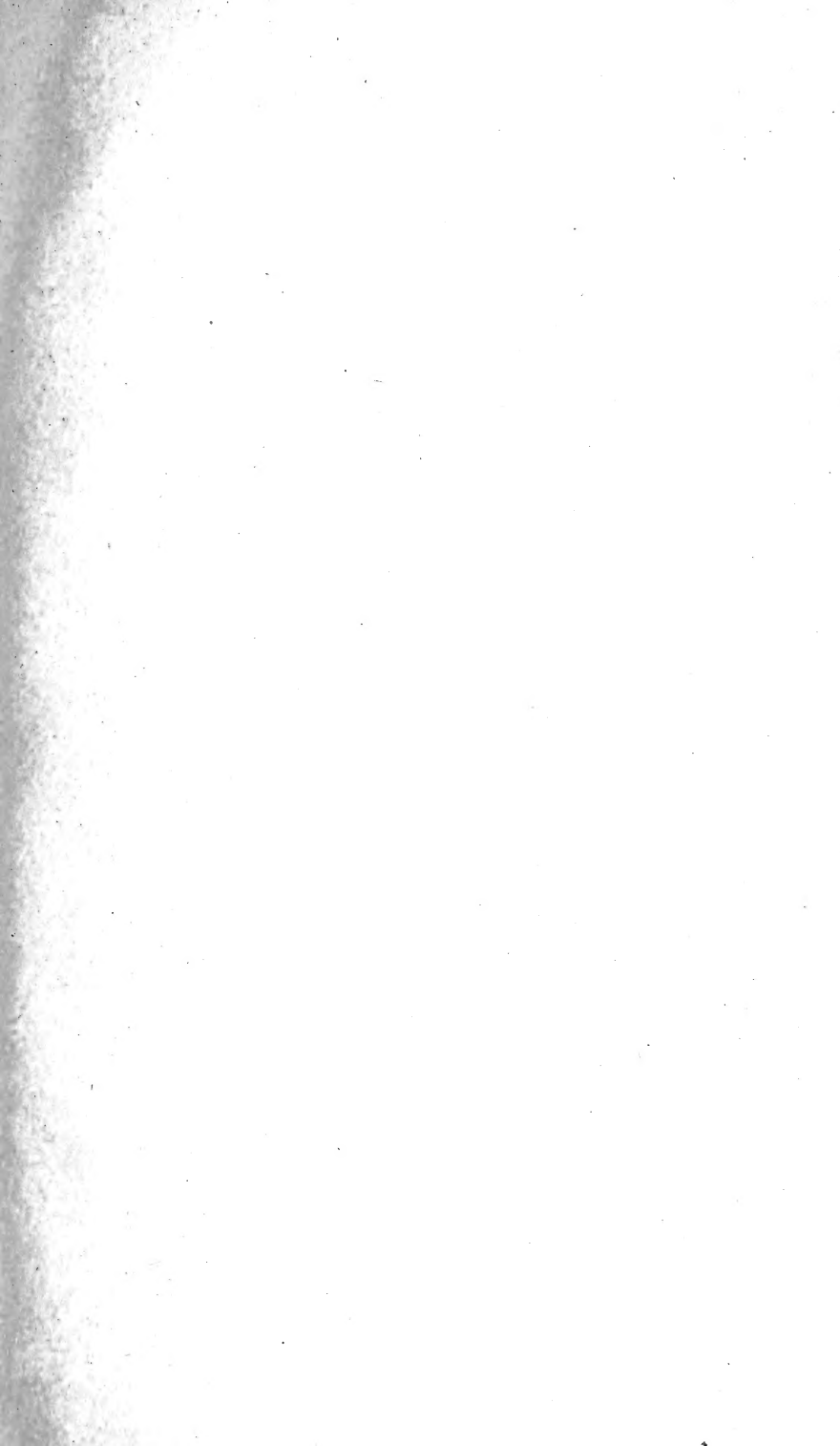
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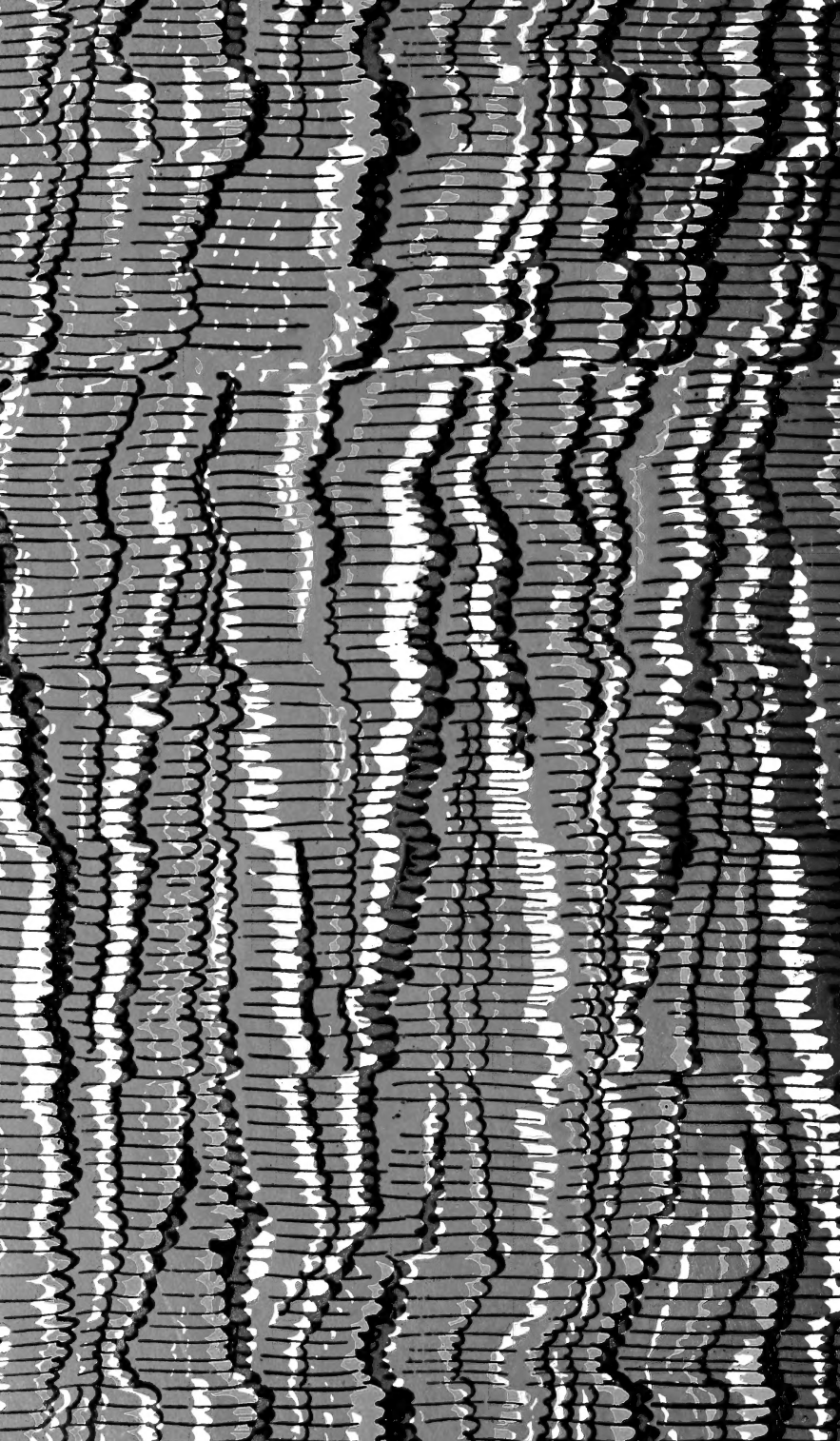












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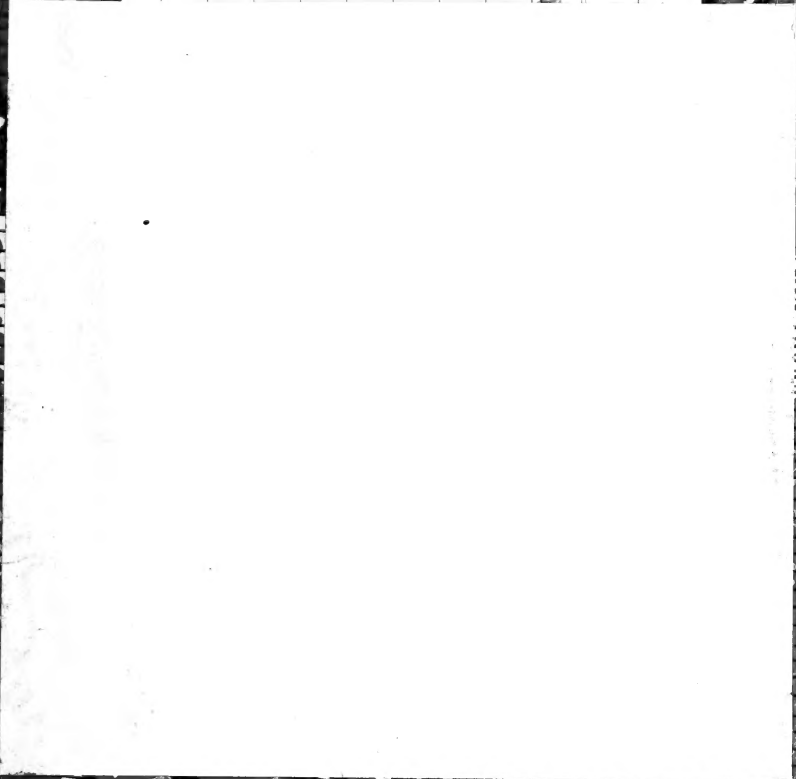
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